



Rocky Flats Environmental Technology Site

Radiological and Non-Radiological Characterization Package for the Building 707 Cluster

November 1999

Revision 0

(Volume 2 of 2)



Best Available Copy

ADMIN RECCRD
B707-A-000003

V/1048

SURVEY UNIT BREAKDOWN FORM

Building	Survey Area	Survey Unit	Description
707	A (99-0002)	N/A	NE CORNER OF ROOM 200 BUILDING 707 2 ND FLOOR
707	B (99-0002)	N/A	NW CORNER OF ROOM 200 BUILDING 707 2 ND FLOOR
707	C (99-0002)	N/A	SE CORNER OF ROOM 200, BUILDING 707, 2 ND FLOOR
707	D (99-0002)	N/A	SW CORNER OF ROOM 200, BUILDING 707, 2 ND FLOOR
707	E (99-0002)	N/A	EAST HALF OF ROOM 210 BUILDING 707 2 ND FLOOR
707	F (99-0002)	N/A	WEST HALF OF ROOM 210 BUILDING 707 2 ND FLOOR
707	G (99-0002)	N/A	NE CORNER OF ROOM 220 BUILDING 707 2 ND FLOOR
707	H (99-0002)	N/A	NW CORNER OF ROOM 220 BUILDING 707 2 ND FLOOR
707	I (99-0002)	N/A	SE CORNER OF ROOM 220, BUILDING 707, 2 ND FLOOR
707	J (99-0002)	N/A	SW CORNER OF ROOM 220 BUILDING 707 2 ND FLOOR
707	K (99-0002)	N/A	NORTHERN PORTION OF ROOM 240 BUILDING 707, 2 ND FLOOR
707	L (99-0002)	N/A	SOUTHERN PORTION OF ROOM 240 BUILDING 707 2 ND FLOOR
707	M (99-0002)	N/A	MODULE A (ROOM 100) BUILDING 707 MAIN FLOOR
707	N (99-0002)	N/A	MODULE B (ROOM 105) BUILDING 707 MAIN FLOOR
707	O (99-0002)	N/A	MODULE C (ROOM 110) BUILDING 707 MAIN FLOOR
707	P (99-0002)	N/A	MODULE D (ROOM 115) BUILDING 707 MAIN FLOOR
707	Q (99-0002)	N/A	MODULE E (ROOM 120) BUILDING 707 MAIN FLOOR
707	R (99-0002)	N/A	MODULE F BUILDING 707 MAIN FLOOR (EXCLUDES ROOMS 125A A25B)
707	S (99-0002)	N/A	MODULE G BUILDING 707 MAIN FLOOR
707	T (99-0002)	N/A	MODULE H BUILDING 707 MAIN FLOOR
707	U (99-0002)	N/A	RBA ROOMS 167, 169, 173, 175, 179, 171, 180, 181, 181B, 181A, 181C, 182A 182B 182C 183 184A 184, 185 188 197 194 195 193 196A, 196 OF BUILDING 707 MAIN FLOOR
707	V (99-0002)	N/A	CORRIDORS H J K L S T U V NORTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY TO CORRIDOR H ROOMS 164 166 170 OF BUILDING 707 MAIN FLOOR
707	W (99-0002)	N/A	CORRIDORS M N P R AND THE SOUTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY EXTENDING TO THE SOUTH END OF BUILDING 707 INCLUDES ROOMS 178 AND 178A
707	X (99-0002)	N/A	MODULES J AND K OF BUILDING 707 EXCLUDING ROOMS 146, 141 AND 142
707	Y (99-0002)	N/A	NON-RADIOLOGICAL ROOMS 150 150A 150B 151A, 151B, 151C 153A 153B 153C 153D 153E 155 155A 157 159A, 159B, 159C 159 161 163 165D 165A 165B 165C 165E 176 174 172 172A 164 162 160A 160 158 156 154, 149 152 AND CORRIDORS <u>EXCLUDING</u> ROOMS 164, 166, 170, 178 AND 178A OF BUILDING 707
707	Z (99-0002)	N/A	EXTERNAL SURFACES/ROOF OF BUILDING 707 (INCLUDING ROOF SECTIONS 1, 2 AND 3)
708/708S	AA (99-0002)	N/A	INTERIOR OF BUILDING 708 AND BUILDING 708S (BREATHING AIR COMPRESSOR ON SKIDS)
708	BB (99-0002)	N/A	EXTERNAL SURFACES/ROOF OF BUILDING 708
731	CC (99-0002)	N/A	INSIDE OF BUILDING 731

[illegible]

B707 Survey Area Status

Survey Area	Surveys Required	Surveys Completed	Surveys Remaining	Samples Required	Samples Completed	Samples Remaining	Total Remaining	Report Status	Data Table Status	Comments
A	130	130	0	0	0	0	0	Complete	Complete	Package closed
B	130	130	0	0	0	0	0	Complete	Complete	Package closed
C	130	130	0	0	0	0	0	Complete	Complete	Package closed
D	130	130	0	0	0	0	0	Complete	Complete	Package closed
E	140	140	0	0	0	0	0	Complete	Complete	Package closed
F	140	140	0	0	0	0	0	Complete	Complete	Package closed
G	130	130	0	0	0	0	0	Complete	Complete	Package closed
H	130	130	0	0	0	0	0	Complete	Complete	Package closed
I	130	130	0	0	0	0	0	Complete	Complete	Package closed
J	130	130	0	0	0	0	0	Complete	Complete	Package closed
K	130	130	0	0	0	0	0	Complete	Complete	Package closed
L	130	130	0	0	0	0	0	Complete	Complete	Package closed
M	132	132	0	4	4	0	0	Complete	Complete	Package closed
N	134	130	0	4	4	0	0	Complete	Complete	Package closed, four not taken, high alpha bkgd
O	157	157	0	4	4	0	0	Complete	Complete	Package closed
P	122	122	0	4	3	0	0	Complete	Complete	Package closed, one sample not taken, no HCA
Q	122	122	0	4	3	0	0	Complete	Complete	Package closed, one sample not taken, no HCA
R	122	122	0	3	3	0	0	Complete	Complete	Package closed
S	177	177	0	3	3	0	0	Complete	Complete	Package closed
T	137	128	0	3	2	0	0	Complete	Complete	Package closed, locations inaccessible, no crt drain
U	173	173	0	3	1	0	0	Complete	Complete	Package closed, no paint for 2 samples
V	248	205	0	3	3	0	0	Complete	Complete	Package closed, posted ARA
W	159	159	0	3	3	0	0	Complete	Complete	Package closed
X	145	145	0	8	8	0	0	Complete	Complete	Package closed
Y	174	174	0	0	0	0	0	Complete	Complete	Package closed
Z	63	63	0	2	2	0	0	Complete	Complete	Package closed
AA	99	89	0	2	2	0	0	Complete	Complete	Package closed, equipment removed from site
BB	54	53	0	1	1	0	0	Complete	Complete	Package closed
CC	82	82	0	1	1	0	0	Complete	Complete	Package closed
DD	44	38	0	0	0	0	0	Complete	Complete	Package closed, 3 not located, 1 added to list 1 repeated
EE	100	45	0	6	0	0	0	Complete	Complete	Package closed 711 flooded 718 no paint
FF	30	30	0	0	0	0	0	Complete	Complete	Package closed
GG	30	30	0	1	0	0	0	Complete	Complete	Package closed, no paint
HH	0	0	0	0	0	0	0	Complete	Complete	Deleted
II	0	0	0	0	0	0	0	Complete	Complete	Deleted
JJ	35	35	0	1	0	0	0	Complete	Complete	Package closed no paint
KK	0	0	0	0	0	0	0	Complete	Complete	Deleted
LL	0	0	0	0	0	0	0	Complete	Complete	Deleted
AA	96	96	0	0	0	0	0	Complete	Complete	Package closed
BB	117	117	0	0	0	0	0	Complete	Complete	Package closed
CC	80	80	0	0	0	0	0	Complete	Complete	Package closed
DD	40	40	0	0	0	0	0	Complete	Complete	Package closed
EE	70	0	0	2	0	0	0	Complete	Complete	Package closed, posted ARA
FF	30	30	0	1	0	0	0	Complete	Complete	Package closed no paint
GG	70	56	0	0	0	0	0	Complete	Complete	Package closed, locations not accessible
HH	30	30	0	0	0	0	0	Complete	Complete	Package closed
II	30	30	0	0	0	0	0	Complete	Complete	Package closed
Totals	4652	4440	0	63	47	0	0	Complete	Complete	

DESCRIPTION	SURVEY AREA	SAMPLE ID, BIN 00A1196 (event #, hostile code)	NUCLIDE	pCi/g	MDA (pCi/g)	MASS (g)	SURFACE AREA (x100 cm ²)	NUCLIDE (dpm/100cm ²)	ESTIMATED MDA (dpm/100cm ²)	URANIUM TOTAL (dpm/100cm ²) DCGL = 5000	TRANSURANIC TOTAL (dpm/100cm ²) DCGL = 100
red paint	M	001 002	U-233/234	0.178	0.076	6.93	6	0.5	0.2	1	
			U-235	0.013	0.105			0.0	0.3		
			U-238	0.145	0.085			0.4	0.2		
			Pu-239/240	7.280	0.047			18.7	0.1		
			Am-241	2.690	0.068			6.9	0.2		
red paint	M	002 002	U-233/234	0.126	0.057	7.40	2.5	0.8	0.4	3	26
			U-235	-0.003	0.092			0.0	0.6		
			U-238	0.409	0.057			2.7	0.4		
			Pu-239/240	12.500	0.041			82.1	0.3		
			Am-241	1.800	0.089			11.8	0.6		
red paint	M	003 002	U-233/234	0.549	0.034	6.50	2	4.0	0.2	14	94
			U-235	0.015	0.042			0.1	0.3		
			U-238	1.370	0.034			9.9	0.2		
			Pu-239/240	15.700	0.042			113.3	0.3		
			Am-241	2.970	0.060			21.4	0.4		
red paint	M	004 002	U-233/234	0.474	0.039	6.47	2	3.4	0.3	14	
			U-235	0.106	0.048			0.8	0.3		
			U-238	1.420	0.081			10.2	0.6		
			Pu-239/240	3.020	0.095			21.7	0.7		
			Am-241	0.330	0.131			2.4	0.9		
red paint	N	005 001	U-233/234	0.089	0.034	5.49	2	0.5	0.2	2	24
			U-235	0.025	0.075			0.2	0.5		
			U-238	0.215	0.034			1.3	0.2		
			Pu-239/240	8.560	0.039			52.2	0.2		
			Am-241	1.490	0.215			9.1	1.3		
red paint	N	006 002	U-233/234	0.230	0.063	7.8	2	2.0	0.5	6	61
			U-235	0.048	0.044			0.4	0.4		
			U-238	0.399	0.062			3.5	0.5		
			Pu-239/240	5.050	0.098			43.7	0.8		
			Am-241	0.576	0.056			5.0	0.5		
red paint	N	007 002	U-233/234	0.311	0.066	8.00	2	2.8	0.6	13	49
			U-235	0.044	0.081			0.4	0.7		
			U-238	1.120	0.066			9.9	0.6		
			Pu-239/240	53.400	0.034			474.2	0.3		
			Am-241	8.940	0.061			79.4	0.5		
										554	

DESCRIPTION	SURVEY AREA	SAMPLE ID, RIN 00A1196 (event & bottle code)	NUCLIDE	PC/G	MDA (PC/G)	MASS (G)	SURFACE AREA (x100 cm ²)	NUCLIDE (dpm/100cm ²)	ESTIMATED MDA (dpm/100cm ²)	URANIUM TOTAL (dpm/100cm ²) DCGL _u =5000	TRANSURANIC TOTAL (dpm/100cm ²) DCGL _t =100
red paint	N	008 002	U-233/234	0.147	0.040	7.66	2	12	0.3		
			U-235	0.073	0.049			0.6	0.4		
			U-238	0.513	0.040			4.4	0.3	6	
			Pu-239/240	4.390	0.040			37.3	0.3		
			Am-241	0.719	0.085			6.1	0.7		43
red paint	O	009 002	U-233/234	0.227	0.036	6.91	2	17	0.3		
			U-235	0.043	0.079			0.3	0.6		
			U-238	0.180	0.064			1.4	0.5	3	
			Pu-239/240	217.000	0.258			1664.4	2.0		
			Am-241	37.300	0.211			286.1	1.6		1961
red paint	O	010 002	U-233/234	0.057	0.101	7.66	4	0.2	0.4		
			U-235	-0.026	0.139			-0.1	0.6		
			U-238	0.174	0.112			0.7	0.5	1	
			Pu-239/240	301.000	0.374			1279.6	1.6		
			Am-241	22.900	0.144			97.4	0.6		1377
red/purple paint	O	11 002	U-233/234	0.072	0.039	6.06	3	0.3	0.2		
			U-235	0.011	0.085			0.0	0.4		
			U-238	0.057	0.039			0.3	0.2	1	
			Pu-239/240	912.000	0.746			4089.8	3.3		
			Am-241	74.900	0.194			335.9	0.9		4426
red paint	O	012 002	U-233/234	0.078	0.067	5.89	2	0.5	0.4		
			U-235	0.052	0.047			0.3	0.3		
			U-238	0.230	0.066			1.5	0.4	2	
			Pu-239/240	8.650	0.083			56.6	0.5		
			Am-241	1.030	0.065			6.7	0.4		63
red paint	P	013 002	U-233/234	0.096	0.032	7.12	3	0.5	0.2		
			U-235	0.009	0.071			0.0	0.4		
			U-238	0.174	0.057			0.9	0.3	1	
			Pu-239/240	33.400	0.064			176.0	0.3		
			Am-241	4.460	0.063			23.5	0.3		199
red paint	P	014 002	U-233/234	0.179	0.055	7.41	3	1.0	0.3		
			U-235	0.028	0.038			0.2	0.2		
			U-238	0.252	0.031			1.4	0.2	3	
			Pu-239/240	25.000	0.073			137.1	0.4		
			Am-241	3.340	0.141			18.3	0.8		155

DESCRIPTION	SURVEY AREA	SAMPLE ID, RIN 00A1186 (event #, bottle code)	NUCLIDE	pCi/g	MDA (pCi/g)	MASS (g)	SURFACE AREA (x100 cm ²)	NUCLIDE (dpm/100cm ²)	ESTIMATED MDA (dpm/100cm ²)	URANIUM TOTAL (dpm/100cm ²) DCGL = 5000	TRANSURANIC TOTAL (dpm/100cm ²) DCGL = 100
red paint	P	015 002	U-233/234	0.092	0.036	7.67	3	0.5	0.2		
			U-235	0.010	0.078			0.1	0.4		
			U-238	0.183	0.035			1.0	0.2	2	
			Pu-239/240	2.530	0.060			14.4	0.3		
			Am-241	0.327	0.115			1.9	0.7		16
red paint	Q	016 002	U-233/234	0.182	0.060	6.83	3	0.9	0.3		
			U-235	0.061	0.042			0.3	0.2		
			U-238	0.533	0.034			2.7	0.2	4	
			Pu-239/240	1.860	0.085			9.4	0.4		
			Am-241	0.257	0.058			1.3	0.3		11
red paint	Q	17 002	U-233/234	0.408	0.066	6.59	4.5	1.3	0.2		
			U-235	0.051	0.046			0.2	0.1		
			U-238	0.456	0.078			1.5	0.3	3	
			Pu-239/240	2.090	0.072			6.8	0.2		
			Am-241	0.238	0.072			0.8	0.2		8
red paint	Q	018 002	U-233/234	0.550	0.065	10.38	3	4.2	0.5		
			U-235	0.044	0.081			0.3	0.6		
			U-238	0.307	0.065			2.4	0.5	7	
			Pu-239/240	3.570	0.085			27.4	0.7		
			Am-241	0.437	0.054			3.4	0.4		31
red paint	R	022 002	U-233/234	0.756	0.038	10.45	4	4.4	0.2		
			U-235	0.028	0.083			0.2	0.5		
			U-238	0.223	0.038			1.3	0.2	6	
			Pu-239/240	2.010	0.078			11.7	0.5		
			Am-241	1.050	0.065			6.1	0.4		18
red/maoon paint	R	023 002	U-233/234	0.301	0.067	7.43	4	1.2	0.3		
			U-235	0.017	0.047			0.1	0.2		
			U-238	0.924	0.066			3.8	0.3	5	
			Pu-239/240	0.482	0.065			2.0	0.3		
			Am-241	0.090	0.081			0.4	0.3		2
red paint	R	024 002	U-233/234	0.115	0.035	6.27	3	0.5	0.2		
			U-235	0.025	0.075			0.1	0.3		
			U-238	0.427	0.061			2.0	0.3	3	
			Pu-239/240	0.962	0.035			4.5	0.2		
			Am-241	0.205	0.069			1.0	0.3		5

DESCRIPTION	SURVEY AREA	SAMPLE ID, RIN 0041196 (event #, bottle code)	NUCLIDE	PC/g	MDA (pCi/g)	MASS (g)	SURFACE AREA (x100 cm ²)	NUCLIDE (dpm/100cm ²)	ESTIMATED MDA (dpm/100cm ²)	URANIUM TOTAL (dpm/100cm ²) DCGL = 5000	TRANSURANIC TOTAL (dpm/100cm ²) DCGL = 100
red paint	S	019 002	U-233/234	12 700	0 039	8 46	1	238 5	0 7		
			U-235	0 518	0 048			9 7	0 9		
			U-238	0 432	0 039			8 1	0 7	256	
			Pu-239/240	1 290	0 067			24 2	1 3		
			Am-241	0 206	0 093			3 9	1 7		28
red paint	S	020 002	U-233/234	18 600	0 061	6 64	1	274 2	0 9		
			U-235	0 729	0 075			10 7	1 1		
			U-238	0 664	0 061			9 8	0 9	295	
			Pu-239/240	1 920	0 064			28 3	0 9		
			Am-241	0 390	0 138			5 7	2 0		34
red/maroon paint	S	021 002	U-233/234	0 142	0 035	7 89	1	2 5	0 6		
			U-235	0 064	0 043			1 1	0 8		
			U-238	0 183	0 073			3 2	1 3	7	
			Pu-239/240	3 410	0 082			59 7	1 4		
			Am-241	0 597	0 172			10 5	3 0		70
red paint	T	025 002	U-233/234	0 176	0 067	6 55	10 5	0 2	0 1		
			U-235	0 017	0 047			0 0	0 1		
			U-238	0 106	0 067			0 1	0 1	0	
			Pu-239/240	0 431	0 060			0 6	0 1		
			Am-241	0 090	0 231			0 1	0 3		1
red paint	T	026 002	U-233/234	0 180	0 035	5 53	14	0 2	0 0		
			U-235	0 089	0 076			0 1	0 1		
			U-238	0 167	0 035			0 1	0 0	0	
			Pu-239/240	0 265	0 078			0 2	0 1		
			Am-241	0 044	0 133			0 0	0 1		0
red paint	U	030 002	U-233/234	0 306	0 033	2 97	10	0 2	0 0		
			U-235	0 060	0 041			0 0	0 0		
			U-238	0 756	0 033			0 5	0 0	1	
			Pu-239/240	1 980	0 066			1 3	0 0		
			Am-241	0 081	0 074			0 1	0 0		1
tan paint	V	031 002	U-233/234	0 248	0 037	9 41	4	1 3	0 2		
			U-235	0 051	0 046			0 3	0 2		
			U-238	1 650	0 037			8 6	0 2	10	
			Pu-239/240	2 280	0 073			11 9	0 4		
			Am-241	0 661	0 115			3 5	0 6		15

DESCRIPTION	SURVEY AREA	SAMPLE ID, RIN 00A1196 (event #, bottle code)	NUCLIDE	pCi/g	MDA (pCi/g)	MASS (g)	SURFACE AREA (x100 cm ²)	NUCLIDE (dpm/100cm ²)	ESTIMATED MDA (dpm/100cm ²)	URANIUM TOTAL (dpm/100cm ²) DCGL w=5000	TRANSURANIC TOTAL (dpm/100cm ²) DCGL w=100
tan paint	V	032 002	U-233/234	0.165	0.041	7.83	1	2.9	0.7		
			U-235	0.092	0.050			1.6	0.9		
			U-238	0.778	0.084			13.5	1.5	18	
			Pu-239/240	0.604	0.085			10.5	1.5		
			Am-241	0.206	0.093			3.6	1.6		14
tan paint	V	33 002	U-233/234	0.865	0.037	7.88	1	15.1	0.6		
			U-235	0.078	0.081			1.4	1.4		
			U-238	6.200	0.037			108.5	0.6	125	
			Pu-239/240	2.080	0.063			36.4	1.1		
			Am-241	0.754	0.048			13.2	0.8		50
tan paint	W	027 002	U-233/234	0.122	0.068	11.44	3	1.0	0.6		
			U-235	0.018	0.047			0.2	0.4		
			U-238	0.566	0.038			4.8	0.3	6	
			Pu-239/240	0.381	0.071			3.2	0.6		
			Am-241	0.075	0.051			0.6	0.4		4
tan paint	W	028 002	U-233/234	0.274	0.071	7.70	3	1.6	0.4		
			U-235	0.036	0.049			0.2	0.3		
			U-238	0.589	0.083			3.4	0.5	5	
			Pu-239/240	0.195	0.090			1.1	0.5		
			Am-241	0.146	0.049			0.8	0.3		2
tan paint	W	029 002	U-233/234	0.129	0.064	9.12	2	1.3	0.6		
			U-235	-0.007	0.079			-0.1	0.8		
			U-238	0.315	0.064			3.2	0.6	4	
			Pu-239/240	0.488	0.070			4.9	0.7		
			Am-241	0.090	0.061			0.9	0.6		6
red/maroon paint	X	034 002	U-233/234	0.160	0.061	7.04	3	0.8	0.3		
			U-235	0.016	0.043			0.1	0.2		
			U-238	0.261	0.061			1.4	0.3	2	
			Pu-239/240	97.000	0.182			505.3	0.9		
			Am-241	21.100	0.231			109.9	1.2		615
red/maroon paint	X	035 002	U-233/234	0.160	0.039	8.66	4	0.8	0.2		
			U-235	0.029	0.086			0.1	0.4		
			U-238	0.341	0.069			1.6	0.3	3	
			Pu-239/240	39.400	0.062			189.4	0.3		
			Am-241	3.860	0.195			18.6	0.9		208

DESCRIPTION	SURVEY AREA	SAMPLE ID, RIN #, bottle code	NUCLIDE	pCi/g	MDA (pCi/g)	MASS (g)	SURFACE AREA (100 cm ²)	NUCLIDE (dpm/100cm ²)	ESTIMATED MDA (dpm/100cm ²)	URANIUM TOTAL (dpm/100cm ²) DCGL w=5000	TRANSURANIC TOTAL (dpm/100cm ²) DCGL w=100
red/maroon paint	X	036 002	U-233/234	0.154	0.063	8.46	2	1.4	0.6		
			U-235	0.033	0.044			0.3	0.4		
			U-238	0.198	0.036			1.9	0.3	4	
			Pu-239/240	140.000	0.073			1314.7	0.7		
			Am-241	11.700	0.051			109.9	0.5		1435
red paint	X	037 002	U-233/234	0.126	0.034	8.78	4	0.6	0.2		
			U-235	0.025	0.074			0.1	0.4		
			U-238	0.238	0.034			1.2	0.2	2	
			Pu-239/240	8.130	0.060			39.6	0.3		
			Am-241	1.380	0.203			6.7	1.0		46
red/maroon paint	X	038 002	U-233/234	0.292	0.071	11.12	2	3.6	0.9		
			U-235	0.092	0.050			1.1	0.6		
			U-238	1.140	0.040			14.1	0.5	19	
			Pu-239/240	12.600	0.082			155.5	1.0		
			Am-241	1.940	0.289			23.9	3.6		179
red/maroon paint	X	039 002	U-233/234	0.179	0.063	7.26	2	1.4	0.5		
			U-235	0.032	0.044			0.3	0.4		
			U-238	0.160	0.074			1.3	0.6	3	
			Pu-239/240	14.000	0.067			112.8	0.5		
			Am-241	2.730	0.294			22.0	2.4		135
red paint	X	040 002	U-233/234	0.179	0.089	11.09	2	2.2	1.1		
			U-235	0.014	0.110			0.2	1.4		
			U-238	0.327	0.089			4.0	1.1	6	
			Pu-239/240	10.600	0.068			130.5	0.8		
			Am-241	1.050	0.226			12.9	2.8		143
red/maroon paint	X	041 002	U-233/234	0.156	0.078	6.03	2	1.0	0.5		
			U-235	0.082	0.108			0.5	0.7		
			U-238	0.232	0.087			1.6	0.6	3	
			Pu-239/240	55.700	0.039			372.8	0.3		
			Am-241	9.780	0.500			65.5	3.3		438
gray paint & black tar	Z	045 002	U-233/234	0.214	0.045	8.03	1	3.8	0.8		
			U-235	0.041	0.055			0.7	1.0		
			U-238	0.164	0.044			2.9	0.8	7	
			Pu-239/240	0.099	0.090			1.8	1.6		
			Am-241	0.079	0.054			1.4	1.0		3
red/maroon paint			U-233/234	0.059	0.040	10.73	2	0.7	0.5		
			U-235	0.011	0.088			0.1	1.0		

DESCRIPTION	SURVEY AREA	SAMPLE ID, RIN 100A1196 (event #, bottle code)	NUCLIDE	pCi/g	MDA (pCi/g)	MASS (g)	SURFACE AREA (x100 cm ²)	NUCLIDE (dpm/100cm ²)	ESTIMATED MDA (dpm/100cm ²)	URANIUM TOTAL (dpm/100cm ²) DCGL w=5000	TRANSURANIC TOTAL (dpm/100cm ²) DCGL w=100
gray paint & black tar	Z	046 002	U-238	0.068	0.071			0.8	0.8	2	
			Pu-239/240	0.101	0.073			1.2	0.9		
			Am-241	0.021	0.058			0.3	0.7		1
gray paint	AA	043 002	U-233/234	0.306	0.065	7.02	6	0.8	0.2		
			U-235	0.017	0.045			0.0	0.1		
			U-238	0.272	0.076			0.7	0.2	2	
			Pu-239/240	0.191	0.043			0.5	0.1		
			Am-241	0.176	0.128			0.5	0.3		1
gray paint	AA	044 002	U-233/234	0.009	0.069	13.81	8.5	0.0	0.2		
			U-235	0.046	0.085			0.2	0.3		
			U-238	0.095	0.069			0.3	0.2	1	
			Pu-239/240	0.000	0.043			0.0	0.2		
			Am-241	0.011	0.087			0.0	0.3		0
red paint	BB	047 002 ^A	U-233/234	0.211	0.098	13.81	3	2.2	1.0		
			U-235	0.038	0.135			0.4	1.4		
			U-238	0.169	0.109			1.7	1.1	4	
			Pu-239/240	0.029	0.087			0.3	0.9		
			Am-241	-0.018	0.125			-0.2	1.3		0
gray paint w/ pink tinted substrate	CC	042 002	U-233/234	0.138	0.077	6.08	1.75	1.1	0.6		
			U-235	0.036	0.125			0.3	1.0		
			U-238	0.487	0.076			3.8	0.6	5	
			Pu-239/240	53.600	0.106			413.4	0.8		
			Am-241	8.410	0.052			64.9	0.4		478

MIN	0.4	0.0
MAX	294.7	4425.7
MEAN	18.9	279.7
SD	57.7	736.9
DCGL _w =		100

^Aconservative estimate of mass, based on highest sample mass in batch 1940

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SURVEY PACKAGE TRACKING FORM

[illegible]

Rev 9/99

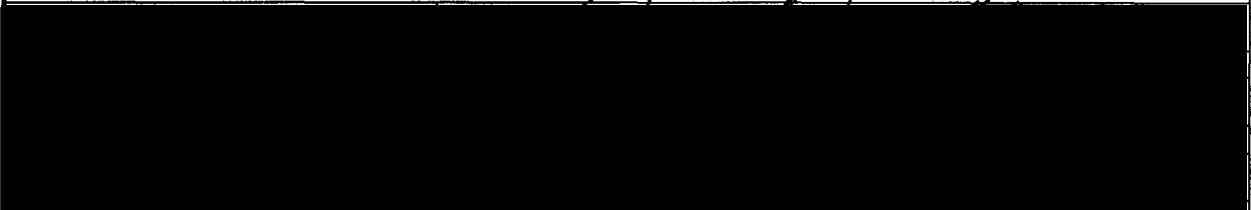
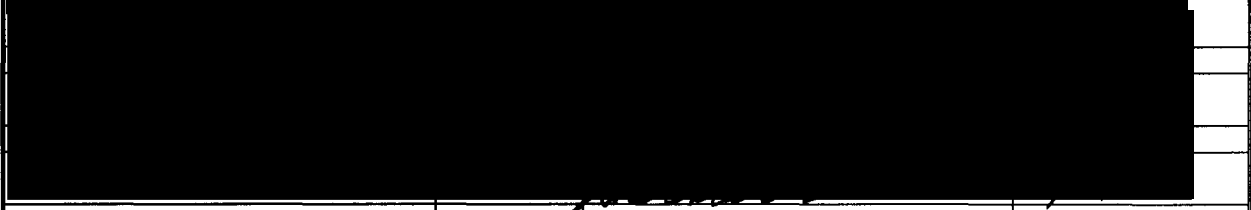
12

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area A		Survey Unit N/A		Area (m ²) 640	
Survey Unit Description North East corner of room 200, 2 nd floor of Building 707 Area is North of Column D-4 and East of Column G-3 Building 707 radiological areas are posted as fixed contamination areas					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	55	45	0	0	55
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002		Building: 707	
Survey Area: A		Survey Unit: N/A	
Survey Unit Description: NORTH EAST CORNER OF ROOM 200, 2 ND FLOOR OF BUILDING 707 AREA IS NORTH OF COLUMN D-4 AND EAST OF COLUMN G-3 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS			
Building Information:			
Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/>			
Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/>			
Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>			
Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____			
Justification for Classification: N/A			
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads			
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads Special security requirements for access to 2 nd floor			
Isolation Controls:			
Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>			
Labeling Requirements: NONE			
Survey Package Implementation:			
			
RESS Manager Printed Name		Employee #	RESS Manager Signature
			Date
Survey Package Closure:			
			
RESS Manager Printed Name		Employee #	RESS Manager Signature
			Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707
Survey Area: A		Survey Unit N/A
Survey Unit Description North East corner of room 200, 2 nd floor of Building 707 Area is North of Column D-4 and East of Column G-3 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>30 unbiased survey points uniformly distributed throughout the area</p> <p>25 biased survey points at the following locations</p> <ul style="list-style-type: none"> - Points around floors adjacent to internally contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, etc - Point near each airlock to the plenums - Near waste drum storage - Other areas of potential concern based on RCT judgement/experience <p>CEILINGS/WALLS > 2 meters</p> <p>30 biased surveys (divided evenly between wall and ceiling when possible) with focus on following areas</p> <ul style="list-style-type: none"> - Walls behind process lines - Tops/sides of plenums - Stained or discolored areas - Areas around pipe or other penetrations <p>EQUIPMENT</p> <p>45 biased survey points on equipment with one or more samples from</p> <ul style="list-style-type: none"> - Equipment which has visible leaks or contained spills beneath them - Survey points at exhaust ducts - 5 survey points on top of overhead piping (where locations are accessible) - Other areas of potential concern based on RCT judgement/experience 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707
Survey Area: A		Survey Unit N/A
Survey Unit Description: North East corner of room 200, 2 nd floor of Building 707 Area is North of Column D-4 and East of Column G-3 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 55 1 m ² surface scans shall be taken at each location identified for surface activity measurements Locations found above the DCGL shall be documented CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NONE (2 nd Floor of 707 does not have painted floors)	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: A	Survey Unit N/A
Survey Unit Description: North East corner of room 200, 2 nd floor of Building 707 Area is North of Column D-4 and East of Column G-3 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: A	Survey Unit N/A
Survey Unit Description: North East corner of room 200, 2 nd floor of Building 707 Area is North of Column D-4 and East of Column G-3 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 707
Survey Area: A		Survey Unit N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>		
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	<i>J</i>	<i>JJ</i>
Total Activity Surveys	<i>J</i>	<i>JJ</i>
Exposure Rate Surveys	N/A	N/A
Removable Surveys	<i>J</i>	<i>JJ</i>
Media Samples	N/A	N/A
Volumetric Samples	N/A	N/A
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	<i>J</i>	<i>JJ</i>
Total Activity Surveys	<i>J</i>	<i>JJ</i>
Exposure Rate Surveys	N/A	N/A
Removable Surveys	<i>J</i>	<i>JJ</i>
Media Samples	N/A	N/A
Volumetric Samples	N/A	N/A
Comments		
Follow-up survey completed for survey point greater than posting criteria. (Pg 9K of 9)		

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>799</u>	Serial # <u>N/A</u>	Serial # <u>1518</u>
Cal Due <u>5-00</u>	Cal Due <u></u>	Cal Due <u>6-29-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u></u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.86%</u>
MDA <u>11.5 DPM</u>	MDA <u></u>	MDA <u>42.5 DPM</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>833</u>	Serial # <u>N/A</u>	Serial # <u>N/A</u>
Cal Due <u>1-14-00</u>	Cal Due <u></u>	Cal Due <u></u>
Bkg <u>41 cpm</u>	Bkg <u></u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>99.2 DPM</u>	MDA <u></u>	MDA <u></u>

Survey Type: Contamination

Building 707

Location Rm 200 (A)

Purpose Reconnaissance Level Characterization

RWP # 99-707-1204

Date 1-10-00 Time 1500

RCT _____

Print name / Signature / Emp #

Comments Floors / Walls < 2 meters unbiased survey points - 1 m² Scans
1 min Pats and swipes
Number / Letter (IA) denotes columns, Floor Survey locations see map

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	<2m - 1G → 1F	3	8	28	16	F	0	-24	32
2	<2m 1F → 1E	3	20	23	17	F	0	48	14
3	<2m 1E → 1D	0	36	19	18	F	9	-8	14
4	<2m 1D → 1C	0	12	32	19	F	0	54	28
5	<2m 1C → 2C	0	-16	14	20	F	0	-12	14
6	<2m 2C → 3C	3	40	23	21	F	0	-12	28
7	<2m 3C → 4C	0	4	14	22	F	0	8	14
8	F	0	-8	32	23	F	0	-4	32
9	F	0	12	14	24	F	0	16	23
10	F	3	-20	14	25	F	0	12	28
11	F	0	-16	32	26	F	6	-40	14
12	F	6	-24	10	27	F	0	68	14
13	F	3	4	42	28	F	0	-16	23
14	F	0	36	5	29	F	0	-24	10
15	F	3	-4	23	30	F	0	12	23

Date Reviewed: 1-24-00 RS Supervision. _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	F	0	-28	28	61				
32	F	0	-12	5	62				
33	F	0	-20	14	63				
34	F	0	44	28	64				
35	F	0	4	10	65				
36	F	0	52	28	66				
37	F	0	-28	23	67				
38	end of Survey				68				
39					69				
40					70				
41					71				
42					72				
43					73				
44					74				
45					75				
46					76				
47					77				
48					75				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

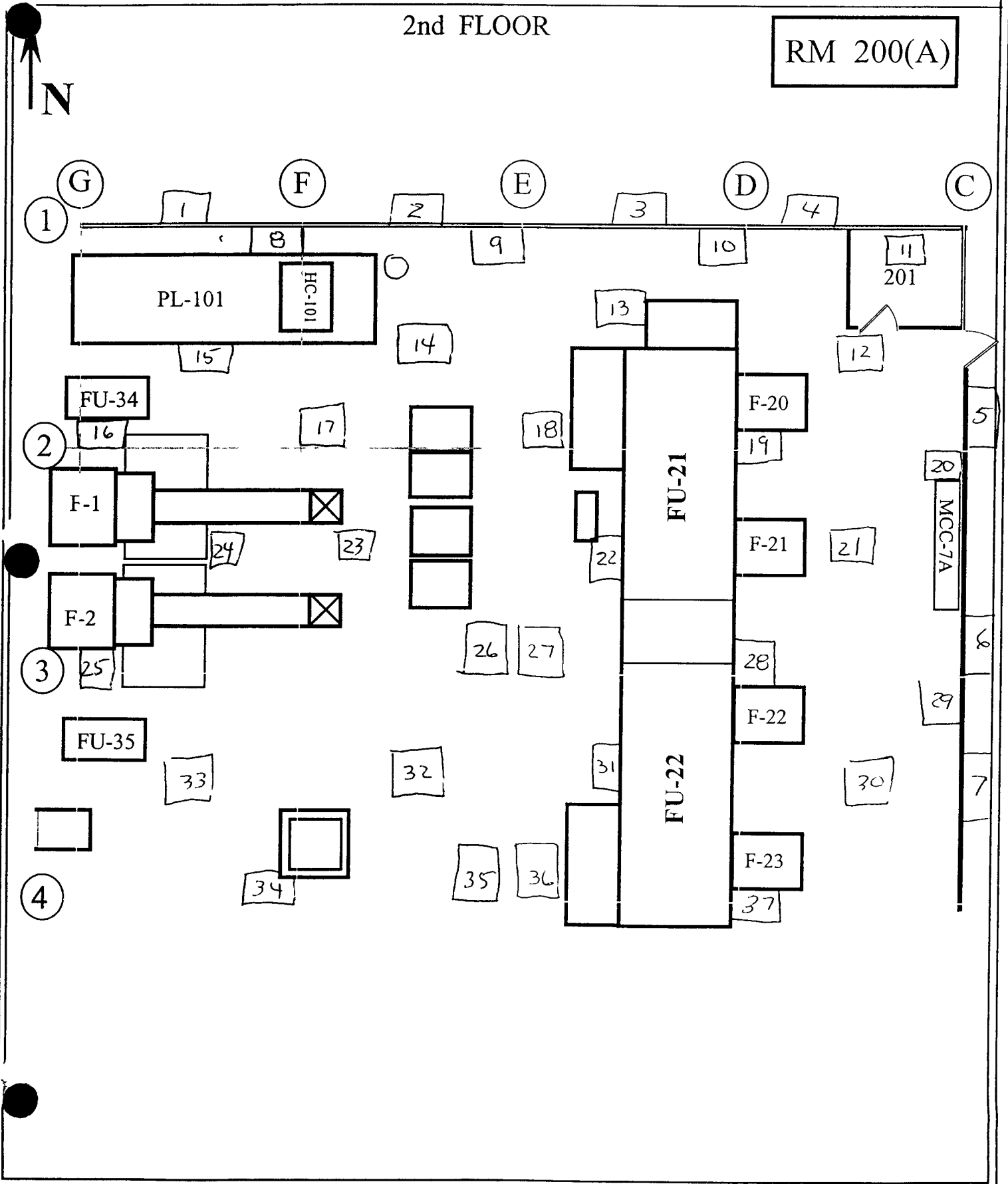
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

2nd FLOOR

RM 200(A)



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>N/A</u>	Serial # <u>1389</u>
Cal Due <u>4-10-00</u>	Cal Due <u></u>	Cal Due <u>6-29-00</u>
Bkg <u>0.4 cpm</u>	Bkg <u></u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.04%</u>
MDA <u>148 dpm</u>	MDA <u></u>	MDA <u>350 dpm</u>

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>N/A</u>	Serial # <u>N/A</u>
Cal Due <u>4-12-00</u>	Cal Due <u></u>	Cal Due <u></u>
Bkg <u>52 cpm</u>	Bkg <u></u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>110.4 dpm</u>	MDA <u></u>	MDA <u></u>

Survey Type Contamination
 Building 707
 Location Rm 200 (A)
 Purpose Reconnaissance Level Characterization

RWP # 99-707-1204Date 1-14-00 Time 1300

RCT _____
 Print name / Signature / Emp #

Comments Floors/Walls <2meters: Biased survey points - 1m² Scans
1m in Pits and swipes See map for locations

SURVEY RESULTS

vipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F Door	0	-20	19	16	F Plenum Door	0	-32	5
2	F Fan F20	0	4	24	17	F Plenum Door	0	28	10
3	F P-trap	0	-40	19	18	F Filter FU34	0	28	29
4	F Fan F-21	0	24	15	19	F Pipes	3	16	15
5	F Door	0	4	34	20	F Pumps	0	-16	5
6	F Fan F-22	0	8	5	21	F Pumps	0	-12	10
7	F P-trap	0	-16	10	22	F Door F1	0	4	19
8	F Fan F-23	0	48	10	23	F Door F2	0	-4	19
9	F Door	0	16	5	24	F Filter FU35	3	-24	19
10	F Pumps	12	4	10	25	F Filter FU36	0	8	19
11	F Door	0	4	5	26	F Pumps	3	-20	24
12	F P-trap	3	-12	15	27	end of Survey			
13	F Plenum Door ⁽¹⁰¹⁾	0	16	19	28				
14	F Plenum Door	0	-20	19	29				
15	F Plenum Door	3	40	5	30				

Date Reviewed. 1-24-00 RS Supervisor

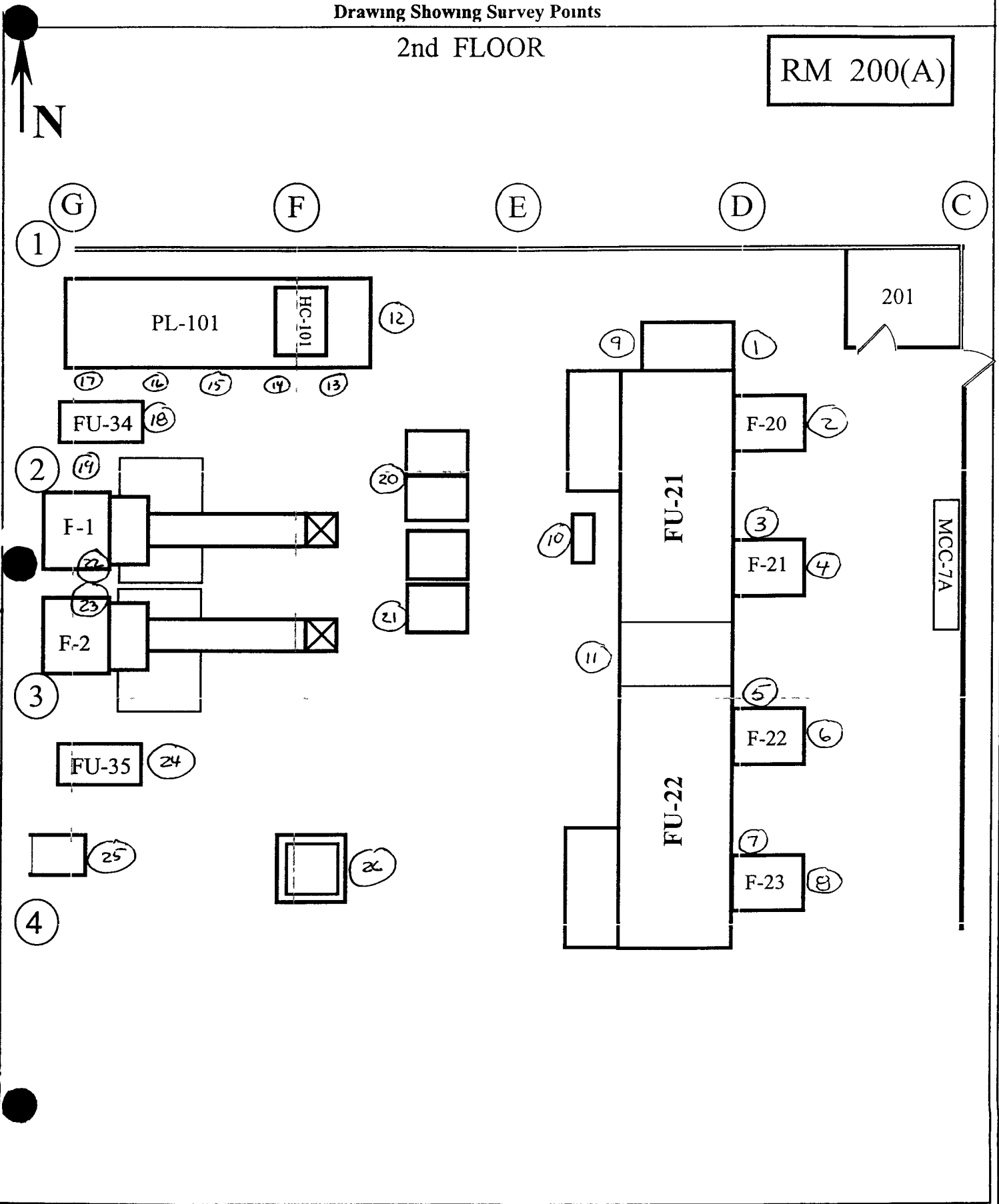
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

2nd FLOOR

RM 200(A)



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>837</u>	Serial # <u>849</u>	Serial # <u>3265</u>
Cal Due <u>5-17-00</u>	Cal Due <u>4-10-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.0 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.01%</u>
MDA <u>8.2 dpm</u>	MDA <u>11.5 dpm</u>	MDA <u>12.9 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>N/A</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u></u>
Bkg <u>54 cpm</u>	Bkg <u>53 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>1123 dpm</u>	MDA <u>111.3</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location Rm 200 A
 Purpose Reconnaissance Level Characterization

RWP # 99-707-1204Date 1-17-00 Time 1530

RCT _____
 Print name / Signature / Emp #

Comments Equipment Biased survey points - 1 min Rats and swipes
(9) Area contained (57) → (80) overhalls -

SURVEY RESULTS

wipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1.	Door Plenum (101)	9	8	0	16	Top	18	16	19
2.	Door Plenum	3	28	15	17	Side	0	-24	15
3.	Door Plenum	0	-12	-5	18	Door	0	8	19
4	Door Plenum	0	-32	5	19	Top F-2	0	-8	10
5	Door Plenum	0	-24	10	20	Pipes	0	12	19
6.	Top Plenum	0	0	5	21	Top	0	4	10
7	Top Plenum	0	-64	0	22	Side	0	8	15
8.	Top Plenum	0	-16	10	23	Door FU-35	0	0	10
9	Door Heat Chamber	39	24	404	24	Front Screen	0	-28	24
10	FU-34 ^{SPL 117-00}	0	12	5	25	Door FU-36	3	8	15
11	FU-34	0	-40	-10	26	Front Screen	0	-4	19
12	FU-34	0	-24	0	27	Pump + pipes	0	8	15
13	Pipes	0	48	19	28	Pump + pipes	0	-12	24
14	Top F-1	0	-24	24	29	Central box	3	-20	5
15	Door	9	-4	10	30	Pump	0	-64	19

Date Reviewed: 1-24-00 RS Supervision: _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	Pump	0	-28	5	61	Duct	0	-16	5
32	Pump	0	-24	5	62	Duct	0	-12	25
33	Pump	3	-16	0	63	Duct	0	-28	5
34	Cabinet	0	-52	0	64	Pipes	0	4	25
35	Cabinet	0	4	10	65	Duct	0	40	15
36	Pump	0	-12	0	66	Duct	0	0	5
37	Top FLI-22	0	-40	24	67	Duct	0	20	0
38	Door	0	8	10	68	Elect Box	0	-28	10
39	Top above door	3	-60	15	69	Pipes	0	-20	5
40	Top FLI-21	0	-80	0	70	Duct	0	52	10
41	Door	3	-4	0	71	Duct	0	60	5
42	Door	0	-40	5	72	Top Heat Chamber	0	12	5
43	Fan F-20	0	-40	15	73	Duct	3	-40	5
44	Top Fu-21	0	-20	15	74	Pipes	0	-12	5
45	Fan F-21	6	-16	24	75	Duct	0	-60	10
46	Top above door	0	-24	19	76	Duct	0	-16	34
47	Door	3	-8	5	77	Steam Pipe	0	0	5
48	Fan F-22	3	-36	19	78	Duct	0	8	5
49	Top Fu-22	3	0	5	79	Duct	0	-40	0
50	Fan F-23	0	-28	24	80	Duct	0	12	5
51	Elect Panel	0	-52	24	81	end of Survey			
52	Elect Box	0	-36	10	82				
53	Box	0	20	10	83				
54	Box	0	28	5	84				
55	Cabinet	0	0	10	85				
56	Box	0	-40	5	86				
57	Duct	0	-4	20	87				
58	Pipes	0	32	5	88				
59	Duct	0	-44	0	89				
60	Duct	0	-32	10	90				

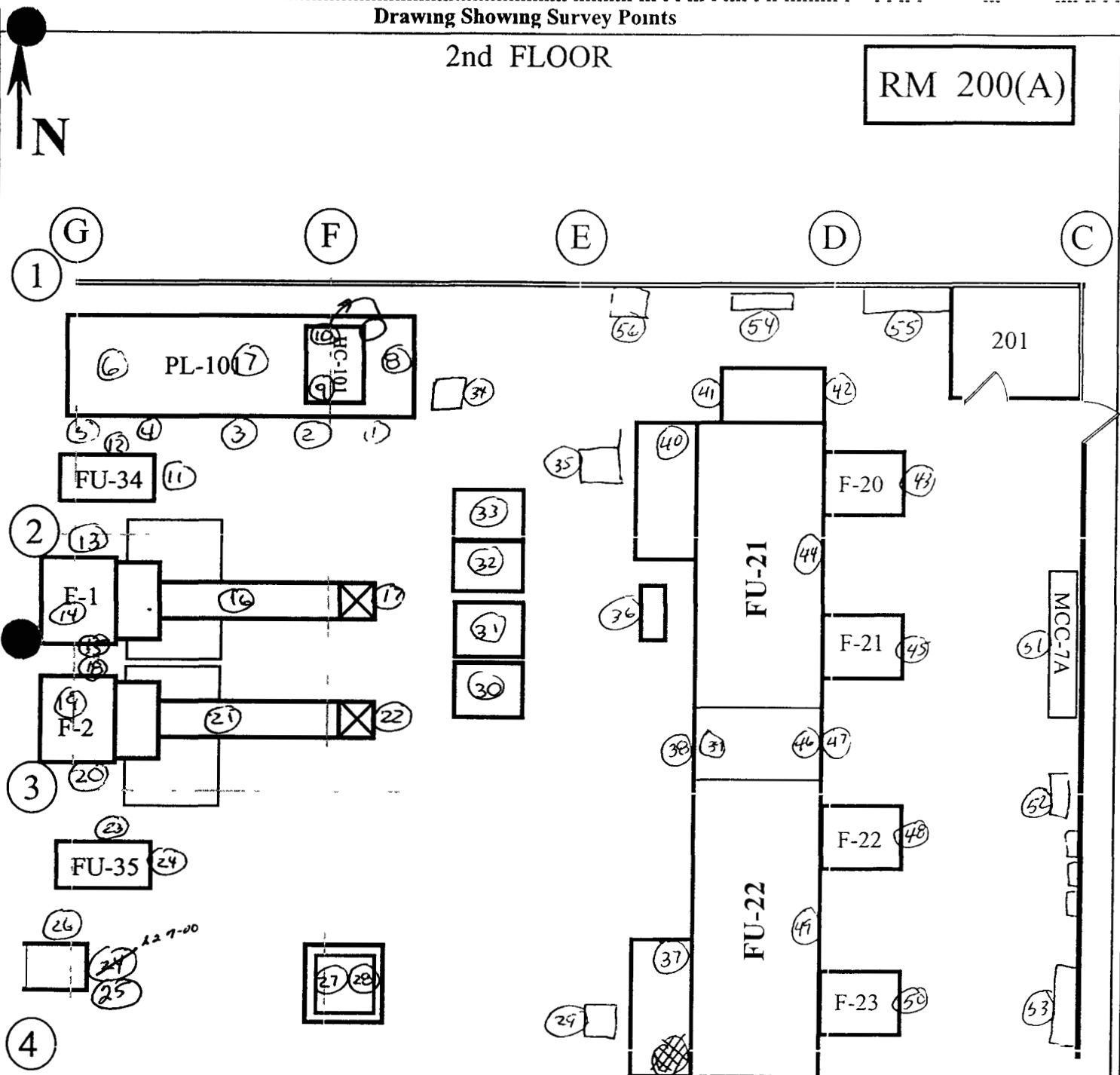
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

2nd FLOOR

RM 200(A)



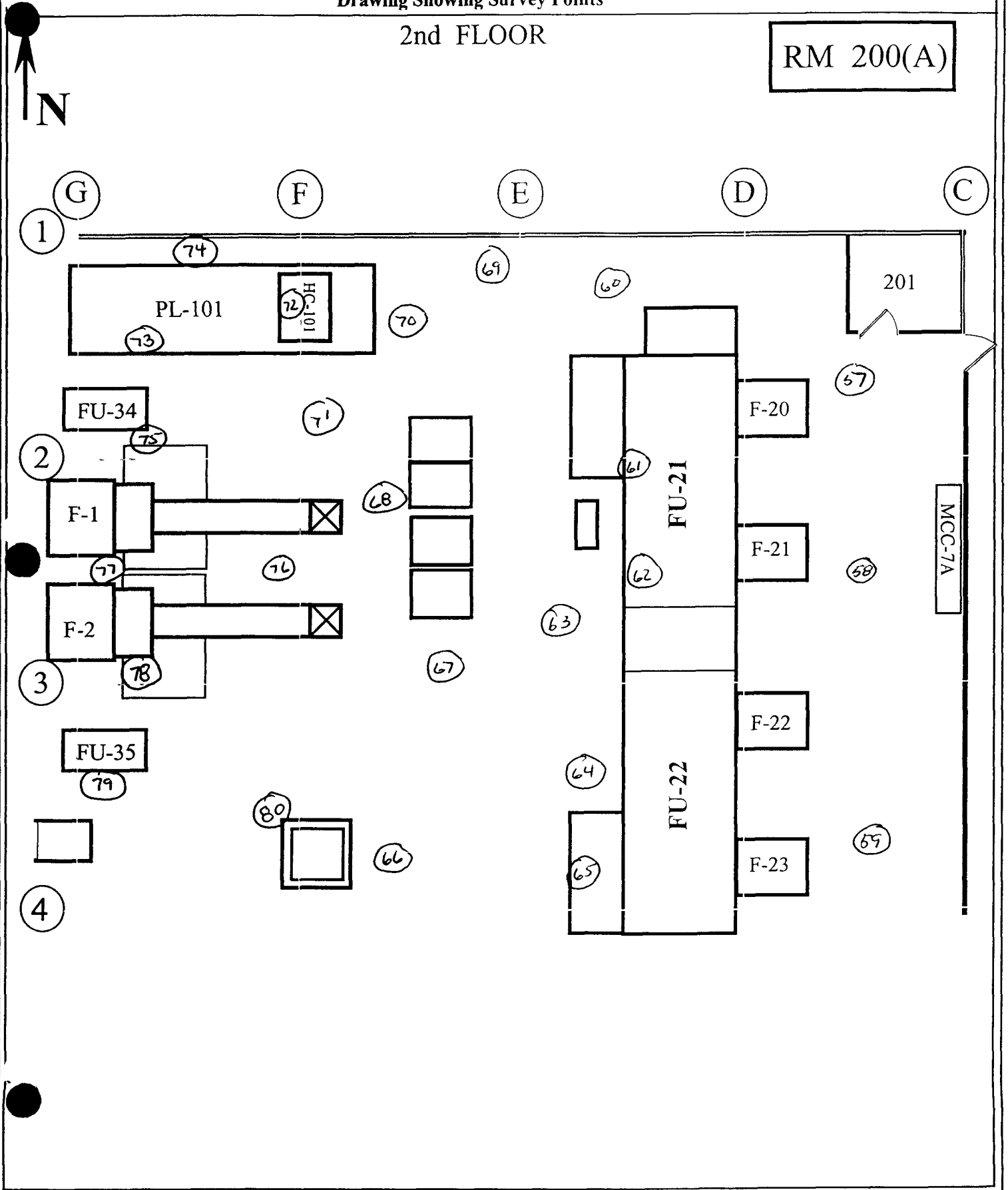
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGIC

Drawing Showing Survey Points

2nd FLOOR

RM 200(A)



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # 837	Serial # 1233
Cal Due 4-10-00	Cal Due 5-17-00	Cal Due 5-11-00
Bkg 0.1	Bkg 0.0	Bkg 0.02
Efficiency 33%	Efficiency 33%	Efficiency 20.63
MDA 8.11.5	MDA 8.2	MDA 45.0
Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model BC-4	Model
Serial # 833	Serial # 872	Serial #
Cal Due 7-14-00	Cal Due 4-12-00	Cal Due
Bkg 46.0	Bkg 52.0	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA 104.5	MDA 110.4	MDA

Survey Type Contamination

Building 707

Location Rm 200 (A)

Purpose Reconnaissance Level Characterization

RWP # 99-707-1204

Date 1-24-00 Time 1100

Comments Ceiling/Walls > 2 meters Based survey points
1 min pats and swipes

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	>2-W	0	48	0	16	C	0.0	-16	-10
2	>2-W	0	-24	15	17	C	0.0	-32	5.0
3	>2-W	0	-20	10	18	C	0.0	-32	0.0
4	>2-W	3	0	5	19	C	0.0	-44	0.0
5	>2-W	0	20	20	20	C	0.0	-32	-5
6	>2-W	0	36	15	21	C	0.0	-32	5
7	>2-W	0	8	20	22	C	0.0	-28	24
8	>2-W	0	-12	25	23	C	0.0	+16	0.0
9	>2-W	0	-8	29	24	C	0.0	-56	5
10	C	0.0	-80	10	25	C	0.0	+12	10
11	C	0.0	-20	10	26	C	0.0	-4	5
12	C	0.0	-4	5	27	C	0.0	+20	10
13	C	0.0	+24	0.0	28	C	0.0	-44	10
14	C	0.0	0.0	39	29	C	0.0	-16	29
15	C	0.0	-16	5	30	C	0.0	+4	0.0

Date Reviewed 1-24-00 RS Supervision: [Redacted]

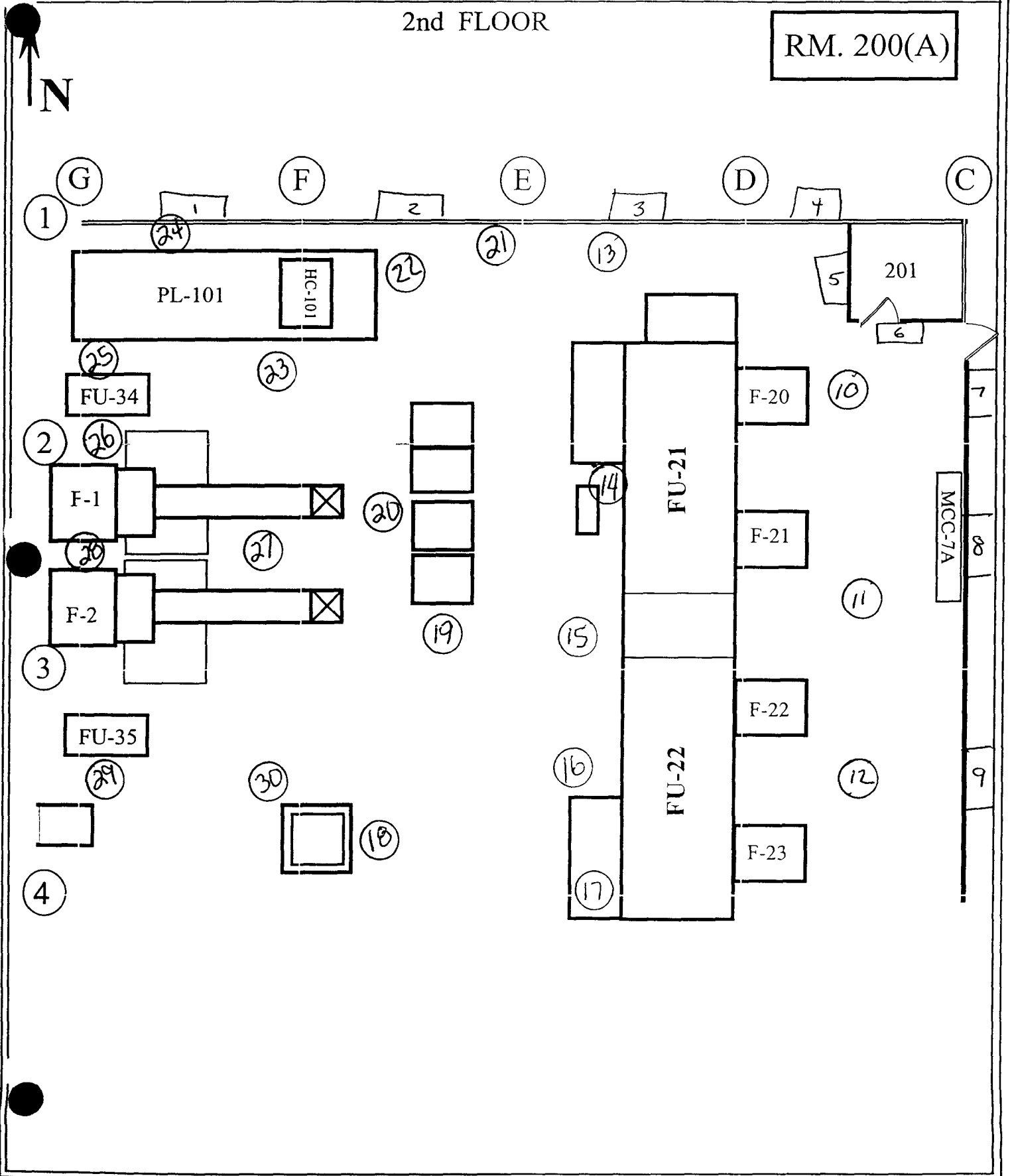
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGIC

Drawing Showing Survey Points

2nd FLOOR

RM. 200(A)



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

COPY

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 843	Serial # 837	Serial # 3265
Cal Due 4-10-00	Cal Due 5-17-00	Cal Due 7-3-00
Bkg 0.3 cpm	Bkg 0.2 cpm	Bkg 2.0 cpm
Efficiency 33%	Efficiency 33%	Efficiency 17%
MDA 20 dpm	MDA 20 dpm	MDA 94 dpm

Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model BC-4	Model
Serial #	Serial #	Serial #
Cal Due	Cal Due N/A	Cal Due
Bkg	Bkg	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA	MDA	MDA

Survey Type Contamination
 Building 707
 Location HC 101
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 2-8-00 Time 1130

RCT _____
 Print name / Signature / Emp #

Comments Post survey of contained contamination on HC 101 Bypass Door

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	CONTAINED BYPASS	<20		<94	16				
2	BOTTOM OF DOOR	<20		<94	17				
3	UNDER BYPASS	<20		<94	18				
4	RIGHT SIDE OF DOOR	<20	N/A	<94	19				
5	RIGHT SIDE OF DOOR	<20		<94	20				
6	TOP OF DOOR	<20		<94	21				
7	LEFT OF DOOR	<20		<94	22				
8	LEFT OF DOOR	<20		<94	23				
9	GRATING IN FRONT OF DOOR	<20		<94	24				
10	END OF SURVEY				25				
11					26				
12					27				
13					28				
14					29				
15					30				

Date Reviewed 2-9-00 RS Supervision

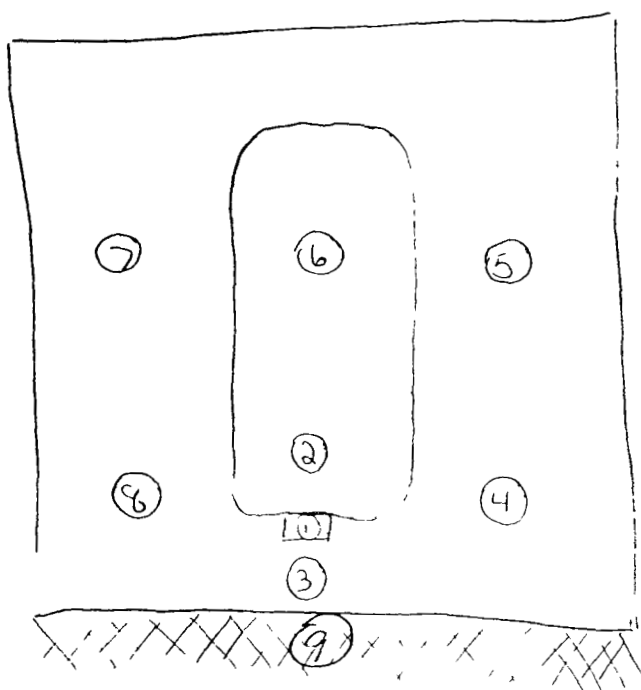
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

PAGE 2 of 2

HC-101



[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area B		Survey Unit N/A		Area (m ²) 640	
Survey Unit Description North West corner of room 200, 2 nd floor of Building 707 Area is North of Column K-4 and West of Column G-3 Building 707 radiological areas are posted as fixed contamination areas					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	55	45	0	0	55
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707
Survey Area: B	Survey Unit: N/A
Survey Unit Description: NORTH WEST CORNER OF ROOM 200, 2 ND FLOOR OF BUILDING 707 AREA IS NORTH OF COLUMN K-4 AND WEST OF COLUMN G-3 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads Special security requirements for access to 2 nd floor	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation:	
<div style="border: 1px solid black; height: 200px; width: 100%;"></div>	
RESS Manager Printed Name	Employee #
RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID. 99-0002		Building 707
Survey Area. B		Survey Unit N/A
Survey Unit Description: North West corner of room 200, 2 nd floor of Building 707 Area is North of Column K-4 and West of Column G-3 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>30 <u>unbiased</u> survey points uniformly distributed throughout the area</p> <p>25 <u>biased</u> survey points at the following types of areas</p> <ul style="list-style-type: none"> - Points around floors adjacent to internally contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, etc - Point(s) near plenum airlocks - Tanks having the potential for being internally contaminated - Near waste drum storage areas <p>CEILINGS/WALLS > 2 meters</p> <p>30 <u>biased</u> surveys (divided evenly between wall and ceiling when possible) with focus on following areas</p> <ul style="list-style-type: none"> - Walls behind process lines - Tops/sides of plenums - Stained or discolored areas - Areas around pipe or other penetrations - Other areas of potential concern based on RCT judgement/experience <p>EQUIPMENT</p> <p>45 <u>biased</u> survey points on equipment with one or more samples from</p> <ul style="list-style-type: none"> - Equipment which has visible leaks or contained spills beneath them - Survey points at exhaust ducts - 5 survey points on top of overhead piping (where locations are accessible) - Other areas of potential concern based on RCT judgement/experience 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707
Survey Area: B		Survey Unit N/A
Survey Unit Description: North West corner of room 200, 2 nd floor of Building 707 Area is North of Column K-4 and West of Column G-3 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 55 1 m ² surface scans shall be taken at each location identified for surface activity measurements Locations found above the DCGL shall be documented CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NONE (2 nd Floor of 707 does not have painted floors)	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: B	Survey Unit N/A
Survey Unit Description: North West corner of room 200, 2 nd floor of Building 707 Area is North of Column K-4 and West of Column G-3 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building: 707
Survey Area: B	Survey Unit: N/A
Survey Unit Description: North West corner of room 200, 2 nd floor of Building 707 Area is North of Column K-4 and West of Column G-3 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID 99-0002		Building 707	
Survey Area: B		Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys		S	[Signature]
Total Activity Surveys		S	[Signature]
Exposure Rate Surveys		N/A	N/A
Removable Surveys		S	[Signature]
Media Samples		N/A	N/A
Volumetric Samples		N/A	N/A
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys		S	[Signature]
Total Activity Surveys		S	[Signature]
Exposure Rate Surveys		N/A	N/A
Removable Surveys		S N/A 7/2/00	N/A 7/2/00
Media Samples		N/A	N/A
Volumetric Samples		N/A	N/A
Comments			

COPY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial #	Serial # 1389
Cal Due 4-10-00	Cal Due	Cal Due 6-29-00
Bkg 0.4 cpm	Bkg N/A	Bkg 1.0 cpm
Efficiency 33%	Efficiency 33%	Efficiency 21.04%
MDA 148 dpm	MDA	MDA 35 dpm
Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model BC-4	Model
Serial # 872	Serial #	Serial # N/A
Cal Due 4-12-00	Cal Due	Cal Due
Bkg 52 cpm	Bkg	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA 110.4 dpm	MDA	MDA

Survey Type Contamination

Building 707

Location Rm 200 (B)

Purpose Reconnaissance Level Characterization

RWP # 99-707-1204

Date 1-14-00 Time 1400

 RCT
 Print name 1/A Signature / Emp #

 Comments Floors/Walls < 2 meters unbiased survey points
 1m² Scans, 1 min pats and swipes See map for locations
 Number/letter (IA) denote columns

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	<2m 4L → 3L	3	-40	5	16	F	0	-28	5
2	<2m 3L → 2L	0	-16	0	17	F	0	-28	5
3	<2m 2L → 1L	0	-8	15	18	F	0	-12	20
4	<2m 1L → 1K	3	-8	15	19	F	3	-20	0
5	<2m 1K → 1J	0	0	10	20	F	0	20	5
6	<2m 1J → 1H	0	-16	15	21	F	3	-20	0
7	<2m 1H → 1G	0	-24	15	22	F	0	36	0
8	F	0	8	5	23	F	0	-8	15
9	F	0	-20	-10	24	F	3	16	0
10	F	0	-36	0	25	F	0	8	0
11	F	0	-12	24	26	F	0	-4	10
12	F	0	-12	0	27	F	0	0	5
13	F	0	12	0	28	F	0	24	0
14	F	0	16	5	29	F	0	-8	0
15	F	0	-16	24	30	F	0	24	20

Date Reviewed 1-27-00 RS Supervision.

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY****Drawing Showing Survey Points**

Type #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	F	0	0	0	61				
32	F	0	20	15	62				
33	F	0	-16	0	63				
34	F	0	-24	5	64				
35	F	0	4	20	65				
36	End of Survey				66				
37					67				
38					68				
39					69				
40					70				
41					71				
42					72				
3					73				
44					74				
45					75				
46					76				
47					77				
48					75				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

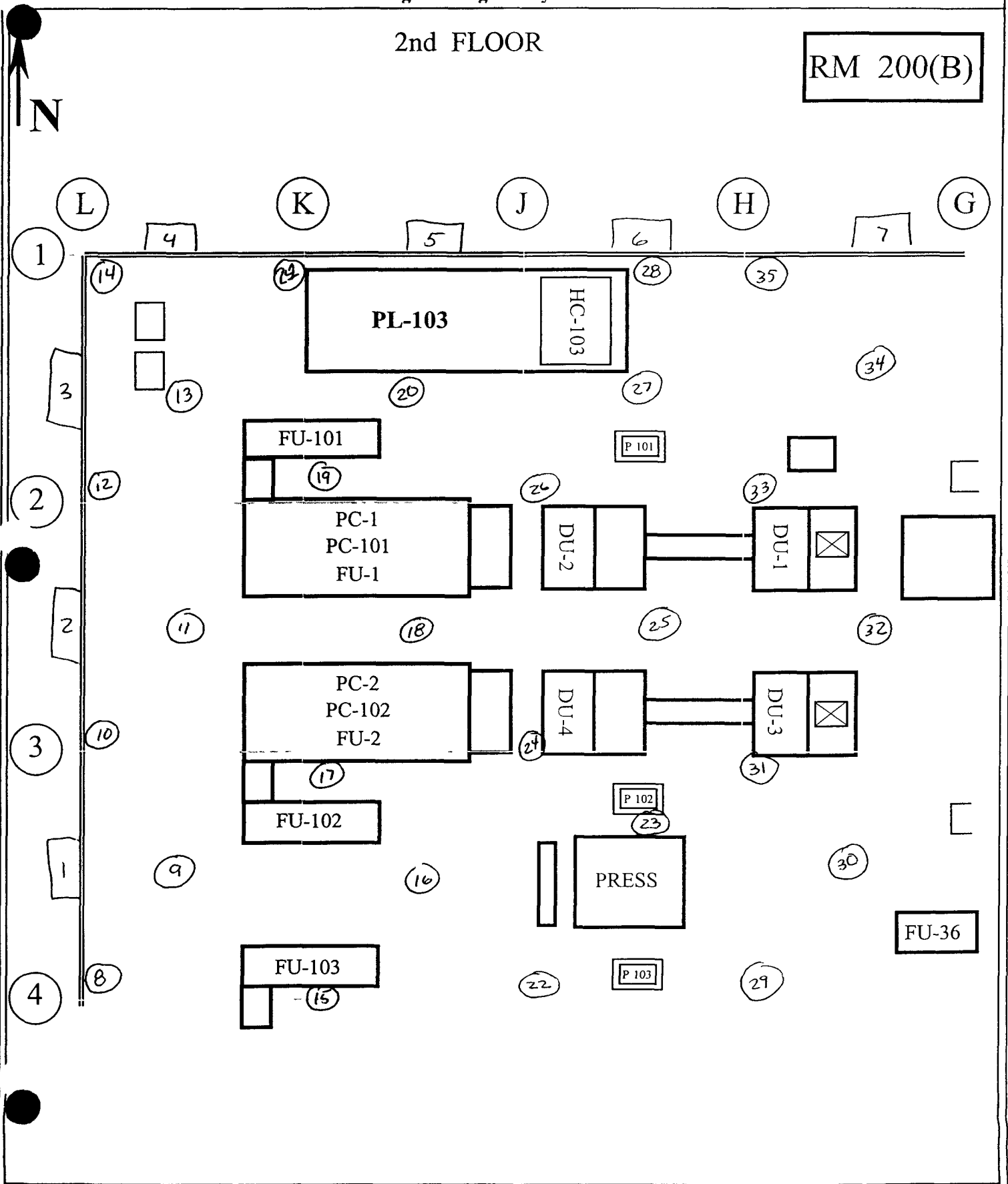
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

2nd FLOOR

RM 200(B)



COPY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1389</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.3 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.04%</u>
MDA <u>139 DPM</u>	MDA <u>115 DPM</u>	MDA <u>129 DPM</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>BC-833</u>	Serial # <u>BC-872</u>	Serial # <u>1389</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>N/A</u>
Bkg <u>50 cpm</u>	Bkg <u>57 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>21.04%</u>
MDA <u>108,4 DPM</u>	MDA <u>115 DPM</u>	MDA <u>129 DPM</u>

Survey Type Contamination

Building 707
 Location Rm 200 (B)
 Purpose Reconnaissance Level Characterization

RWP # 99-707-1204Date 1-19-00 Time 1500

RCT _____
 Print name / Signature / Emp #

Comments Equipment: Biased survey point
1 min. pats and swipes. See map for locations
(47) → (68) overheads

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1.	E 103 Plenum Door	0	28	1240	16	E FU-101	0	24	190
2.	E 103 Plenum Door	0	-8	10.0	17	E F-101B	0	-36	140
3	E 103 Plenum Door	0	-4	0.0	18	E F-101A	3	56	140
4.	E 103 Plenum Door	3	4	190	19	E PHI	0	-12	140
5	E 103 Plenum Door	0	-16	380	20	E Fire Cabinet	0	-60	140
6	E Top of 103 Plenum	0	0	140	21	E PH-2	0	³² -100	50
7	E Center top of Plenum	0	40	19.0	22	E FU-1 Door	0	8	240
8.	E Top HC-103	0	44	5.0	23	E FU-2 Door	0	4	290
9	E Door HC-103	0	-12	100	24	E Humidity Analyzer	0	28	100
10	E Filter on HC-103	0	-36	40	25	E DU-2	0	-36	100
11	E P-Trap interior	6	-48	1090	26	E DU-4	0	-8	190
12	E Exhaust fan 111A	0	-4	100	27	E PU-3A	0	-40	10.0
13	E condensate Return	0	-32	14.0	28	E PU-2B	3	16	140
14	E Regen intake	0	-96	14.0	29	E DU-1	0	20	240
15	E Pump P-101	0	-48	100	30	E DU-3	0	-4	50

Date Reviewed 1-27-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

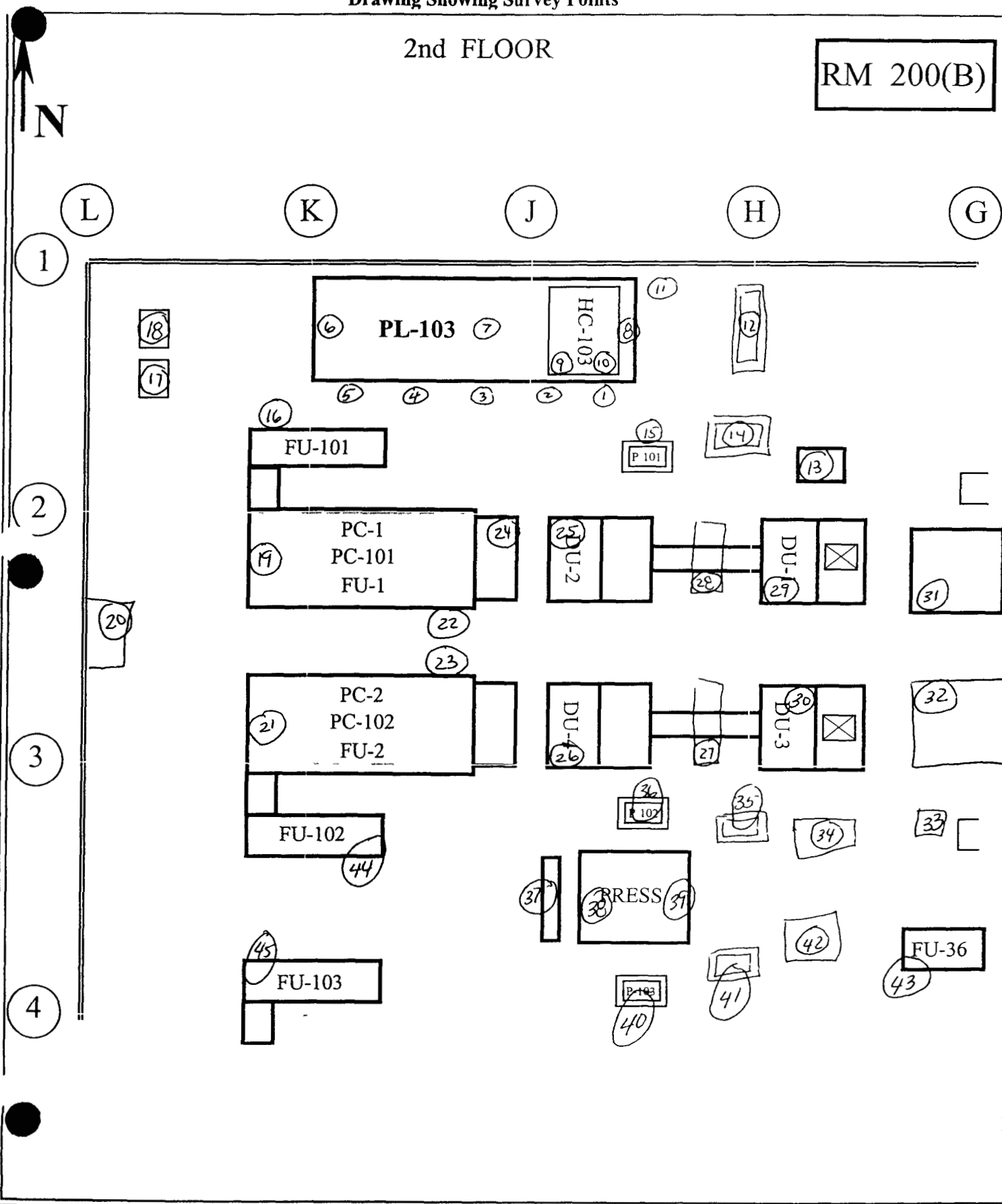
Type #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	E FU-11 Door	0	20	140	61				
32	E FU-12 Door	0	16	140	62				
33	E CU-2	3	-12	290	63				
34	E Regen R-2 intake	0	20	100	64				
35	E PU-4A+B	0	4	240	65				
36	E P-102	0	-4	100	66				
37	E Hydroform Press Panel	0	-12	00	67				
38	E Press	0	36	00	68				
39	E Press	0	-12	620	69				
40	E P-103	0	-40	50	70				
41	E PU-5A+B	0	20	240	71				
42	E Regen R-3 intake	0	-68	190	72				
3	E FU-36	0	-20	00	73				
44	E FU-102	0	-12	240	74				
45	E FU-103	0	-8	00	75				
46	END of ^{SPE 1-19-00} Survey				76				
47	Duct	0	32	0	77				
48	Pipe	0	36	10	78				
49	I-Beam	0	16	24	79				
50	Pipe Heating water	0	56	14	80				
51	Steam line	0	12	14	81				
52	Wood decking	3	-6	0	82				
53	Duct	0	12	0	83				
54	Duct	0	84	4	84				
55	Wire tray	0	36	4	85				
56	Wire tray	0	108	10	86				
57	Conduit	0	28	10	87				
58	Duct	3	52	10	88				
59	End of survey				89				
60					90				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

2nd FLOOR

RM 200(B)



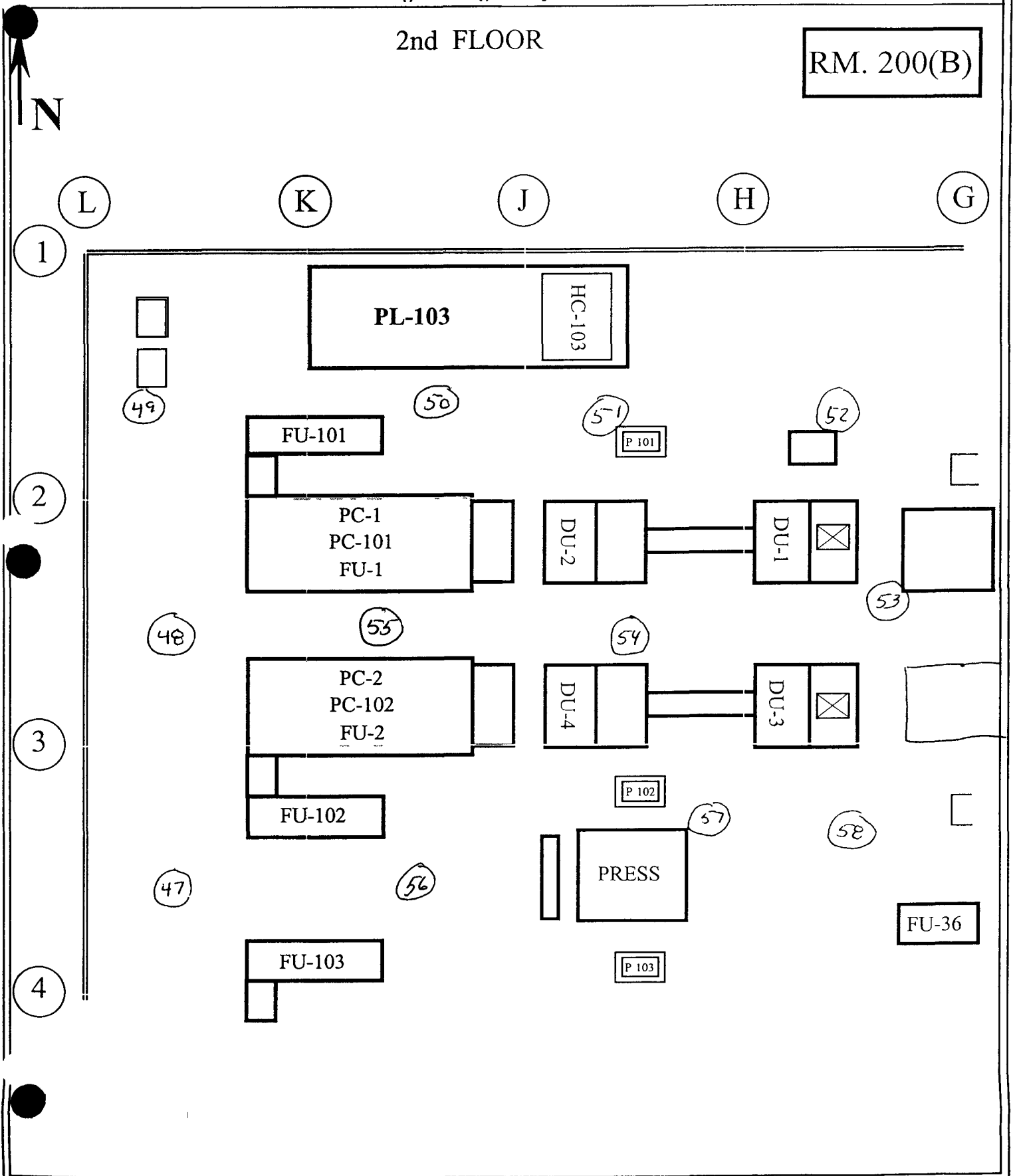
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

2nd FLOOR

RM. 200(B)



COPY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # 837	Serial # 1518
Cal Due 4-10-00	Cal Due 5-17-00	Cal Due 6-29-00
Bkg 0.3 cpm	Bkg 0.1 cpm	Bkg 50 cpm
Efficiency 33%	Efficiency 33%	Efficiency 2186%
MDA 13.9 dpm	MDA 11.5 dpm	MDA 60 dpm
Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model BC-4	Model
Serial # BC-833	Serial # BC-872	Serial #
Cal Due 7-14-00	Cal Due 4-12-00	Cal Due
Bkg 50 cpm	Bkg 57 cpm	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA 1084 dpm	MDA 115 dpm	MDA

Survey Type Contamination

Building 707
 Location Rm 200 (B)
 Purpose Reconnaissance Level Characterization

RWP # 99-707-1204

Date 1-19-00 Time 1600

RCT
 Print name / Signature / Emp #

Comments Floors / Walls < 2 meters Biased survey points
 1m² Scans, 1 min pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1.	F Transfer pump	0	-16	19	16	F Filters Fu-102	0	0	28
2	F Pumps	0	8	19	17	F Filters Fu-102	0	44	23
3	F Fans	0	-16	14	18	F Filters Fu-103	0	4	10
4	P-trap (F)	0	-8	23	19	F Filters Fu-103	0	-32	5
5	F Plenum Door	0	-20	28	20	F Press	0	-24	28
6	F Plenum Door	0	0	19	21	F Transfer pump	3	-12	5
7	F Plenum Door	0	-24	19	22	F Pumps - tank	0	16	28
8	F Plenum Door	0	8	14	23	F Transfer pump	0	0	14
9	F Plenum Door	0	0	14	24	F Pumps - tank	0	-28	5
10	F Filters Fu-101	0	-20	14	25	F Pumps + Tank	3	-32	28
11	F Filters Fu-101	0	-20	23	26	F Pumps + Tank	3	24	28
12	F Drain	0	-24	23	27	F Pump-pipes	0	-12	19
13	F Door	0	-32	14	28	F Pump	3	-12	32
14	F Door	0	-32	0	29	F Air exchanger	0	48	14
15	F Drain	0	-28	23	30	F Air exchanger	0	0	19

Date Reviewed: 1-27-00 RS Supervision

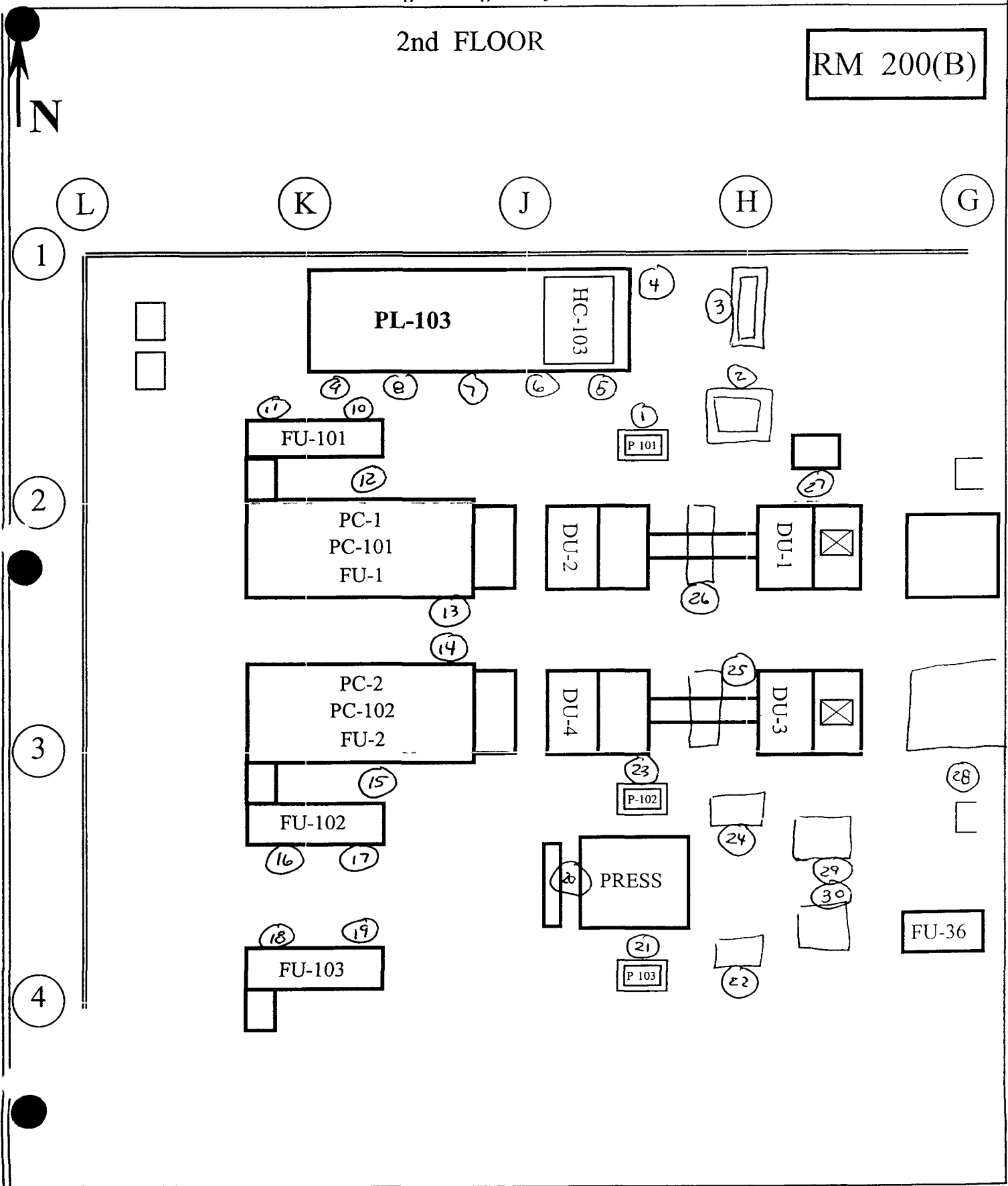
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

2nd FLOOR

RM 200(B)



COPY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # 837	Serial # 1233
Cal Due 4-10-00	Cal Due 5-17-00	Cal Due 5-11-00
Bkg 0.3 cpm	Bkg 0.0	Bkg 0.2
Efficiency 33%	Efficiency 33%	Efficiency 20.63
MDA 17.5	MDA 8.2	MDA 45.0
Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model BC-4	Model
Serial # 833	Serial # 872	Serial #
Cal Due 7-14-00	Cal Due 4-12-00	Cal Due
Bkg 46.0	Bkg 52.0	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA 104.5	MDA 110.4	MDA

Survey Type Contamination
 Building 707
 Location RM 200 (B)
 Purpose Reconnaissance Level Characterization
 RWP # 99 707-1204
 Date 124-00 Time 1530

Comments CEILINGS/WALLS 72 METERS: BIASED SURVEY POINTS / MIN PATS AND SWIPES

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	>2w	3	-36	5	16	C	0	4	15
2	>2w	3	24	0	17	C	0	-60	10
3	>2w	0	-16	19	18	C	0	16	-5
4	>2w	0	24	0	19	C	3	-8	10
5	>2w	0	-32	5	20	C	0	0	10
6	>2w	0	8	-5	21	C	0	-20	5
7	>2w	3	4	5	22	C	0	16	10
8	>2C	3	-20	5	23	C	0	-24	-5
9	C	0	-36	24	24	C	0	40	5
10	C	0	-36	15	25	C	0	-28	39
11	C	0	0	10	26	C	0	-40	10
12	C	0	12	5	27	C	0	-4	19
13	C	0	-4	19	28	C	0	-40	19
14	C	0	-52	19	29	C	0	-48	15
15	C		8	5	30	C	0	12	15

Date Reviewed 12700 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

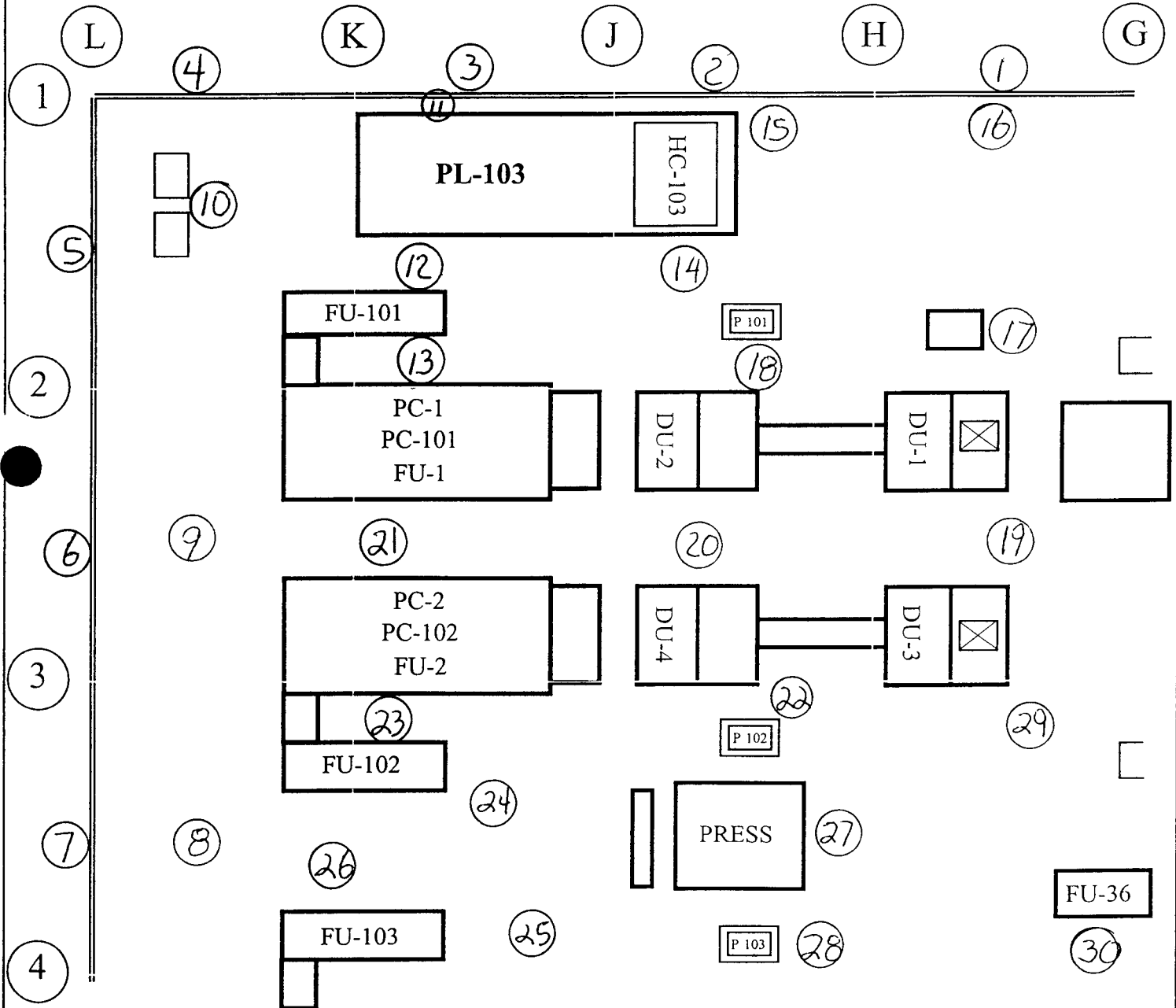
2nd FLOOR

RM 200(B)

CEILING/WALLS
> 2 METERS BIASED

N 30 POINTS

DATE: 1-24-00



[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID. 99-0002		Building 707		Type 3	
Survey Area C		Survey Unit N/A		Area (m ²) 640	
Survey Unit Description South East corner of room 200, 2 nd floor of Building 707 Area is South of Column D-4 and East of Column G-5 Building 707 radiological areas are posted as fixed contamination areas					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	55	45	0	0	55
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707
Survey Area: C	Survey Unit: N/A
Survey Unit Description: SOUTH EAST CORNER OF ROOM 200, 2 ND FLOOR OF BUILDING 707 AREA IS SOUTH OF COLUMN D-4 AND WEST OF COLUMN G-5 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads Special security requirements for access to 2 nd floor	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation: <div style="background-color: black; height: 200px; width: 100%;"></div>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707
Survey Area: C		Survey Unit N/A
Survey Unit Description: South East corner of room 200, 2 nd floor of Building 707 Area is South of Column D-4 and East of Column G-5 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>30 unbiased survey points uniformly distributed throughout the area</p> <p>25 biased survey points at the following types of areas</p> <ul style="list-style-type: none"> - Points around floors adjacent to internally contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, etc - Point(s) near plenum airlocks - Tanks having the potential for being internally contaminated - Near waste drum storage areas <p>CEILINGS/WALLS > 2 meters</p> <p>30 biased surveys (divided evenly between wall and ceiling when possible) with focus on following areas</p> <ul style="list-style-type: none"> - Walls behind process lines - Tops/sides of plenums - Stained or discolored areas - Areas around pipe or other penetrations - Other areas of potential concern based on RCT judgement/experience <p>EQUIPMENT</p> <p>45 biased survey points on equipment with one or more samples from</p> <ul style="list-style-type: none"> - Equipment which has visible leaks or contained spills beneath them - Survey points at exhaust ducts - 5 survey points on top of overhead piping (where locations are accessible) - Other areas of potential concern based on RCT judgement/experience 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building: 707
Survey Area: C		Survey Unit: N/A
Survey Unit Description. South East corner of room 200, 2 nd floor of Building 707 Area is South of Column D-4 and East of Column G-5 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 55 1 m ² surface scans shall be taken at each location identified for non-scan surface activity measurements Locations found above the DCGL shall be documented CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NONE (2 nd Floor of 707 does not have painted floors)	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: C	Survey Unit: N/A
Survey Unit Description: South East corner of room 200, 2 nd floor of Building 707 Area is South of Column D-4 and East of Column G-5 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID. 99-0002	Building 707
Survey Area. C	Survey Unit N/A
Survey Unit Description: South East corner of room 200, 2 nd floor of Building 707 Area is South of Column D-4 and East of Column G-5 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i e , non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e g , elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e g , indicate which direction is North) • Other appropriate information (e g , "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc) 	

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 707	
Survey Area: C		Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys		S	[Signature]
Total Activity Surveys		S	[Signature]
Exposure Rate Surveys		N/A	N/A
Removable Surveys		S	[Signature]
Media Samples		N/A	N/A
Volumetric Samples		N/A	N/A
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys		S	[Signature]
Total Activity Surveys		S	[Signature]
Exposure Rate Surveys		N/A	N/A
Removable Surveys		S	[Signature]
Media Samples		N/A	N/A
Volumetric Samples		N/A	N/A
Comments			

62

145/466

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3265</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.0 cpm</u>	Bkg <u>4.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.01%</u>
MDA <u>12.0 dpm</u>	MDA <u>8.0 dpm</u>	MDA <u>57.0 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>BC 833</u>	Serial # <u>BC-872</u>	Serial # <u>N/A</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u></u>
Bkg <u>49 cpm</u>	Bkg <u>53 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>107 dpm</u>	MDA <u>111 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location Rm 200 (C)
 Purpose Reconnaissance Level Characterization

RWP # 99-707-1204Date 1-18-00 Time 1530

RCT _____
 Print name / Signature / Emp #

Comments Floors / Walls < 2 meters' unbiased survey points - 1m² scans
1min pats and swipes
Number / Letter (IA) denote columns Floor Survey locations
see map

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	<2 C4 → C5	0	16	0	16	F	0	-8	19
2	<2 C5 → C6	0	8	5	17	F	0	52	10
3	<2 C6 → C7	0	32	10	18	F	3	4	15
4	<2 C7 → D7	0	-16	15	19	F	3	0	24
5	<2 E7 (NEXT TO)	0	16	10	20	F	3	-52	15
6	<2 E7 → F7	0	24	5	21	F	0	-16	29
7	<2 F7 → G7	0	44	24	22	F	0	24	19
8	F	3	28	15	23	F	0	0	19
9	F	0	-64	10	24	F	3	-44	24
10	F	0	28	10	25	F	0	12	24
11	F	0	20	5	26	F	3	4	10
12	F	3	-8	15	27	F	0	-28	10
13	F	0	16	10	28	F	0	-8	29
14	F	6	84	5	29	F	0	24	5
15	F	0	8	10	30	F	0	4	10

Date Reviewed 1-27-00 RS Sup

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	F	3	4	19	61				
32	F	0	-24	24	62				
33	F	0	16	15	63				
34	F	0	-60	29	64				
35	end of Survey				65				
36					66				
37					67				
38					68				
39					69				
40					70				
41					71				
42					72				
43					73				
44					74				
45					75				
46					76				
47					77				
48					78				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

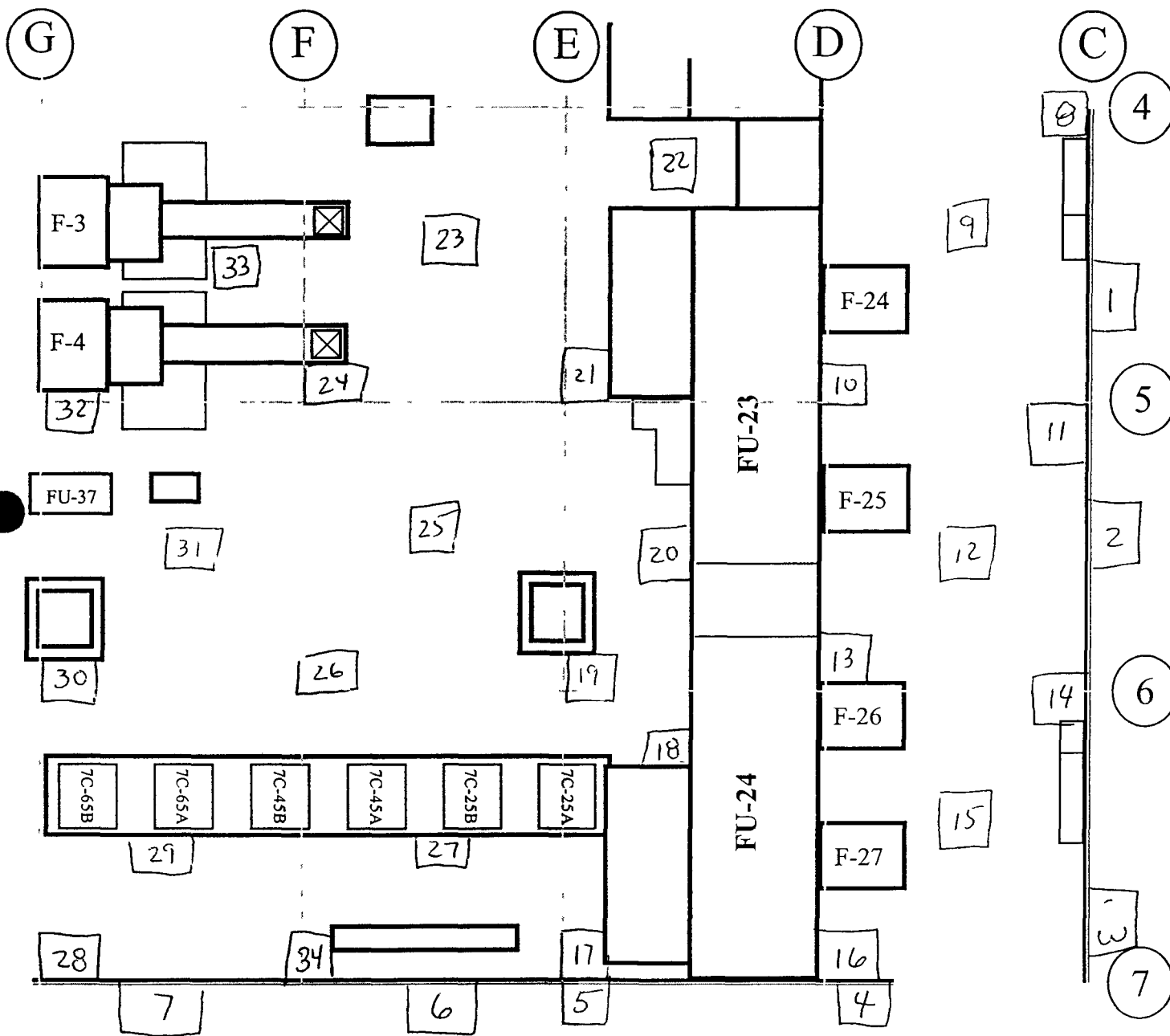
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

2nd FLOOR

RM. 200(C)



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3265</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.0 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>2101%</u>
MDA <u>11.5 dpm</u>	MDA <u>8.2 dpm</u>	MDA <u>12.9 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>BC-833</u>	Serial # <u>BC-872</u>	Serial # <u>N/A</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u></u>
Bkg <u>46 cpm</u>	Bkg <u>52 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>104.5 dpm</u>	MDA <u>110.4 dpm</u>	MDA <u></u>

Survey Type ContaminationBuilding 707Location Rm 200 (C)Purpose Reconnaissance Level CharacterizationRWP # 99-707-1204Date 1-24-00 Time 1500

RCT

Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Biased survey points
1m² Scans, 1min pats and swipes. See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F Fan F-27	0	40	0	16	F Pump	0	12	5
2	F P-trap	0	-8	5	17	F Pump	0	-12	15
3	F FAN-F-26	0	-12	19	18	F Pump	0	+16	10
4	F Door	0	-12	10	19	F Fu-37	0	28	10
5	F FAN-F-25	0	-16	10	20	F Pipes	0	-20	10
6	F FAN-F-24	0	-4	15	21	F Duct	0	-16	5
7	F P-trap	0	20	0	22	F Door	0	4	24
8	F Door	3	40	24	23	F Door	9	-48	15
9	F Door	0	-24	0	24	F Duct	0	-32	0
10	F Vent	0	-4	5	25	F Pipes	0	-40	0
11	F Door	0	-40	5	26	end of Survey			
12	F Pump	12	-24	15	27				
13	F Pump	0	-48	19	28				
14	F Pump	0	-40	0	29				
15	F Pump	0	8	24	30				

Date Reviewed 12700 RS Supervision

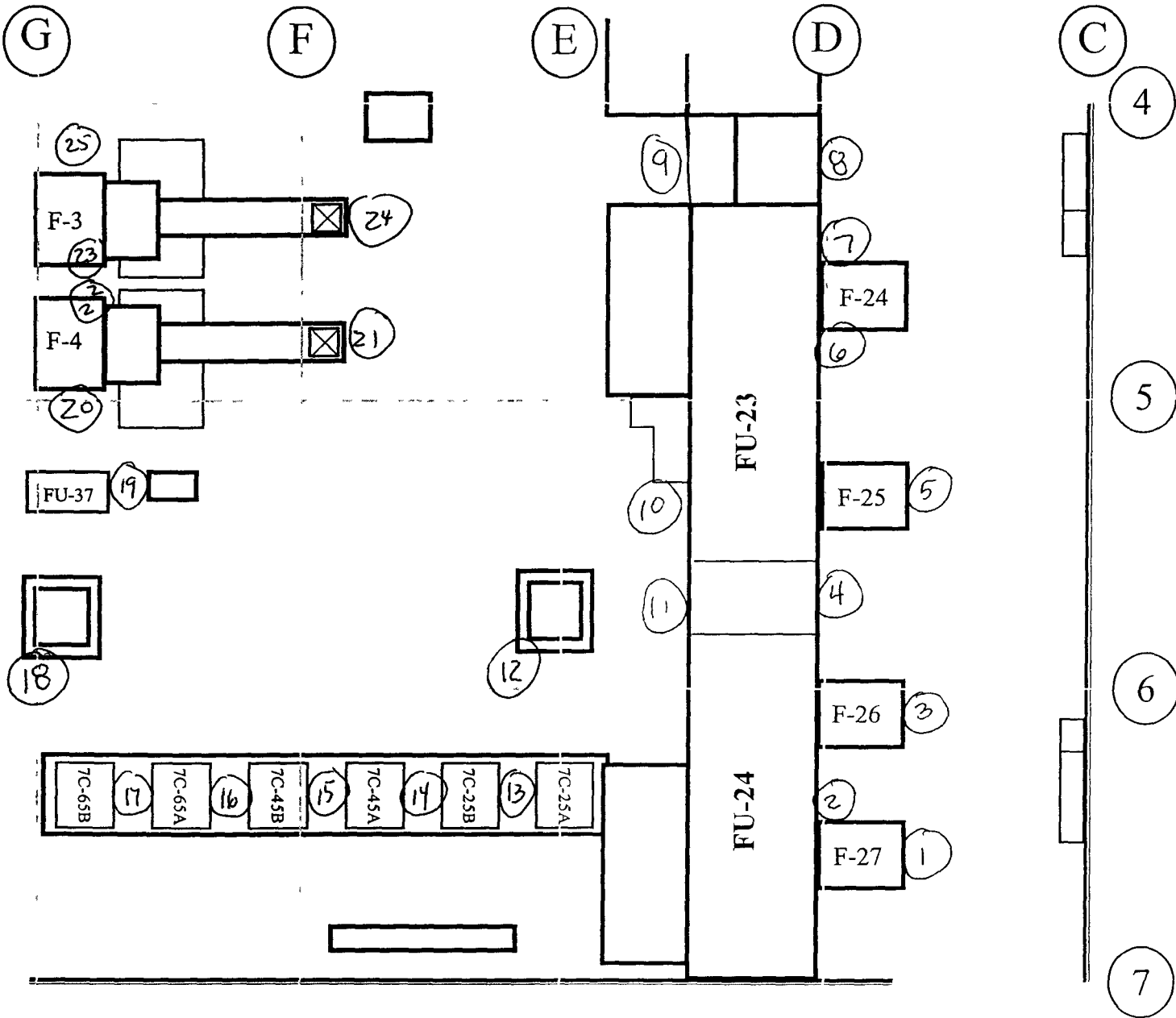
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

2nd FLOOR

RM 200(C)



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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3265</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.0 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.01%</u>
MDA <u>115 dpm</u>	MDA <u>82 dpm</u>	MDA <u>12.9 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>BC-833</u>	Serial # <u>BC872</u>	Serial # <u>NA</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u></u>
Bkg <u>46 cpm</u>	Bkg <u>52 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>1045 dpm</u>	MDA <u>1104 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location Rm 200 (C)
 Purpose Reconnaissance Level Characterization

RWP # 99-707-1204Date 1-24-00 Time 1600

RCT _____
 Print name / Signature / Emp #

Comments Equipment: Biased survey points 1 m n pats and swipes
See map for locations
(47) → (58) overheads

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Elect panel	0	-16	19	16	Door	0	-16	9
2	Elect box	3	-20	19	17	Top	0	-24	15
3	Elect box	0	-20	5	18	Top	0	-4	10
4	Elect box	0	24	10	19	Door	0	16	24
5	Elect panel	0	4	10	20	Top Fu-23	0	-16	5
6	Top Fu 24	3	-40	10	21	Control box	0	-40	15
7	Fan F-27	3	24	10	22	Cabinet	0	-36	15
8	P-trap	0	-20	15	23	Cabinet	0	-12	0
9	Fan F-26	0	12	0	24	Cabinet	3	-4	5
10	Door	0	-12	0	25	Pump	0	20	52
11	Top	3	-8	19	26	Door	0	0	10
12	Fan F-25	0	-36	29	27	Top	0	-12	15
13	Top Fu-23	0	-4	10	28	Top Fu-24	0	8	5
14	Fan F-24	0	24	10	29	Pump	0	12	10
15	P-trap	0	-32	10	30	P	0	8	10

Date Reviewed 1/27/00 RS Supervisor [REDACTED]

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

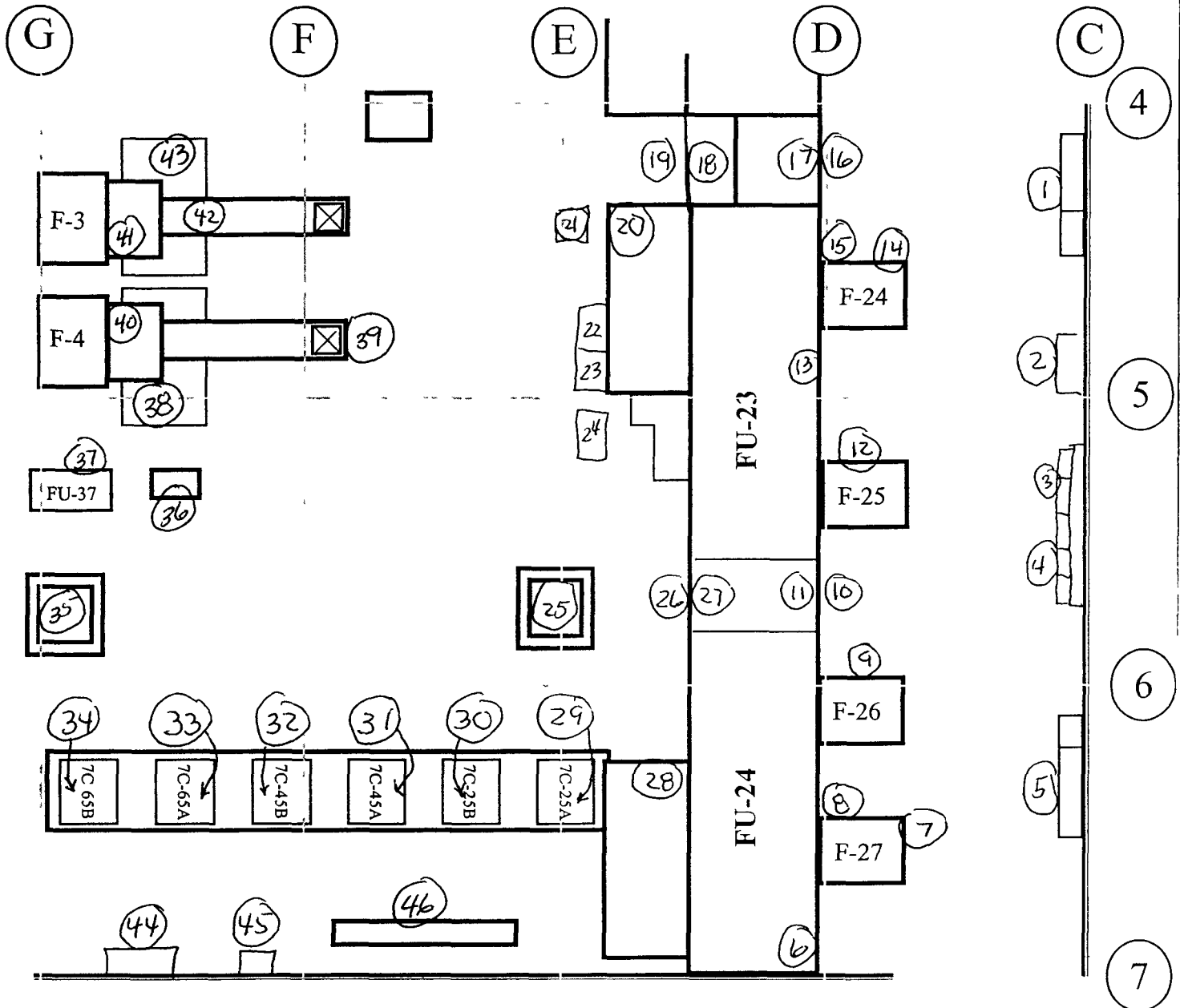
Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	Pump	0	32	19	61				
32	Pump	0	-40	19	62				
33	Pump	0	-32	10	63				
34	Pump	0	24	10	64				
35	Pump	0	-36	10	65				
36	Control box	0	0	19	66				
37	Fu-37	0	8	10	67				
38	Motor	0	32	10	68				
39	Duct	0	-8	19	69				
40	Fan F-4	0	4	5	70				
41	Fan F-3	0	44	24	71				
42	Duct	0	-48	15	72				
43	Motor	0	4	19	73				
44	Cabinete	0	-20	5	74				
45	Elect. box	0	-40	0	75				
46	Elect panel	0	-12	0	76				
47	Duct	6	-24	29	77				
48	Duct	0	36	10	75				
49	Duct	0	-40	10	79				
50	Duct	0	0	10	80				
51	Elect Box	0	16	10	81				
52	Duct	0	80	5	82				
53	Duct	3	12	0	83				
54	Steam line	0	12	0	84				
55	Duct	0	0	0	85				
56	Duct	0	4	10	86				
57	Wire tray	0	4	15	87				
58	Conduit	0	56	15	88				
59	end of Survey				89				
60					90				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

2nd FLOOR

RM. 200(C)

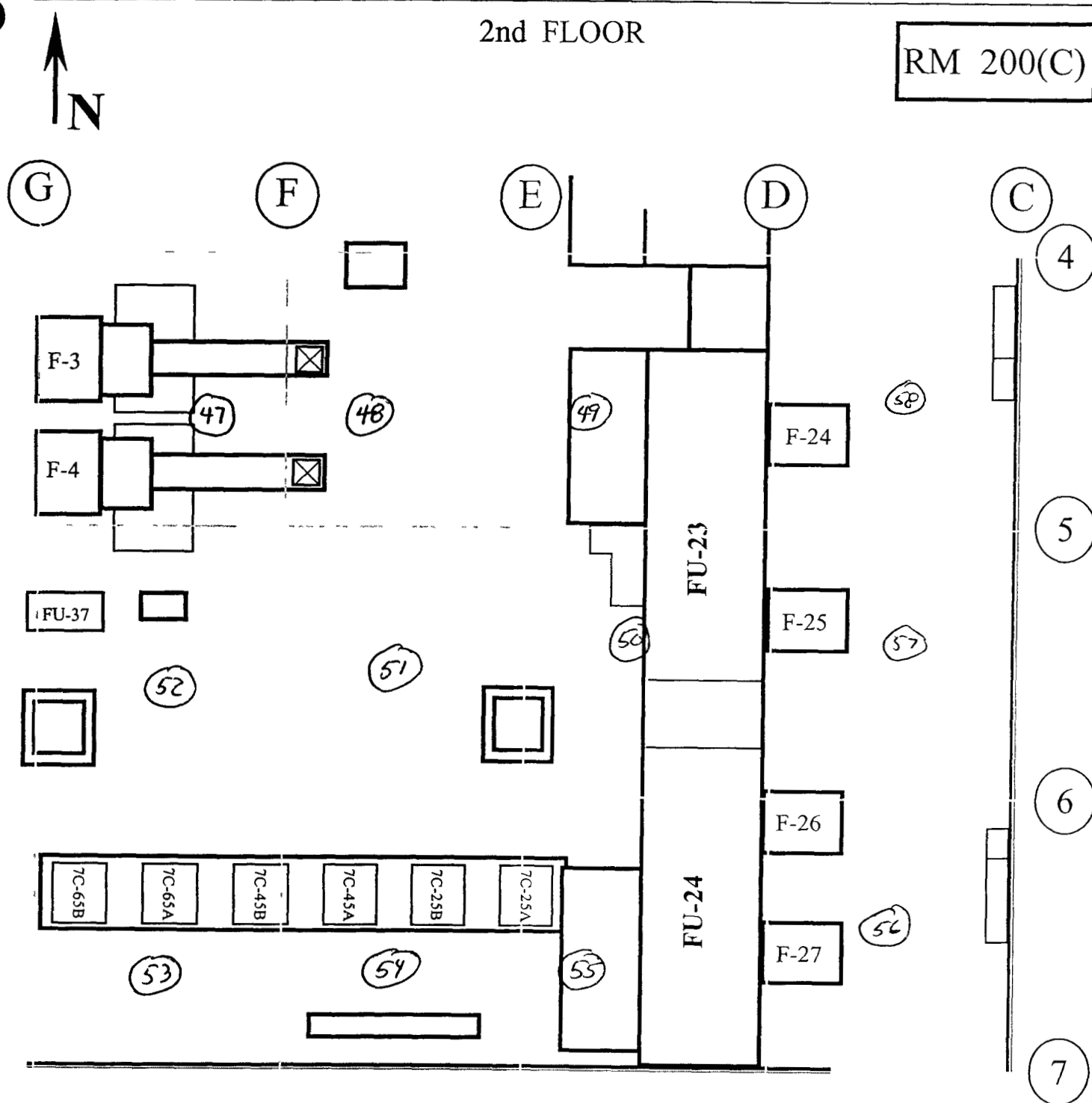


ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGIC AL SAFETY**

Drawing Showing Survey Points

2nd FLOOR

RM 200(C)



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>00 cpm</u>	Bkg <u>00 cpm</u>	Bkg <u>30 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>63%</u>
MDA <u>82 dpm</u>	MDA <u>82 dpm</u>	MDA <u>522 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>833</u>	Serial # <u>872</u>	Serial # <u></u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>N/A</u>
Bkg <u>43 cpm</u>	Bkg <u>45 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>1013 dpm</u>	MDA <u>1034 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location Rm 200 (C)
 Purpose Reconnaissance Level Characterization

RWP # 99-707-1204Date 1-26-00 Time 1500

Comments Ceilings/Walls > 2 meter Biased survey points
1min pats and swipes

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	C	0	16	10	16	>2	0	0	10
2	C	0	8	10	17	>2	0	40	-5
3	C	0	-56	0	18	>2	0	0	5
4	C	0	16	-5	19	C	0	-4	29
5	C	0	-12	29	20	>2	6	24	0
6	C	0	56	0	21	>2	0	72	10
7	C	0	0	0	22	>2	0	20	0
8	C	0	4	10	23	C	3	24	-5
9	C	3	28	0	24	C	0	12	15
10	C	3	32	15	25	C	3	56	10
11	C	0	12	15	26	C	0	36	5
12	C	9	32	19	27	C	3	32	0
13	C	3	-8	19	28	C	0	36	15
14	C	3	48	10	29	C	0	4	5
15	C	0	24	15	30	>2	0	28	0

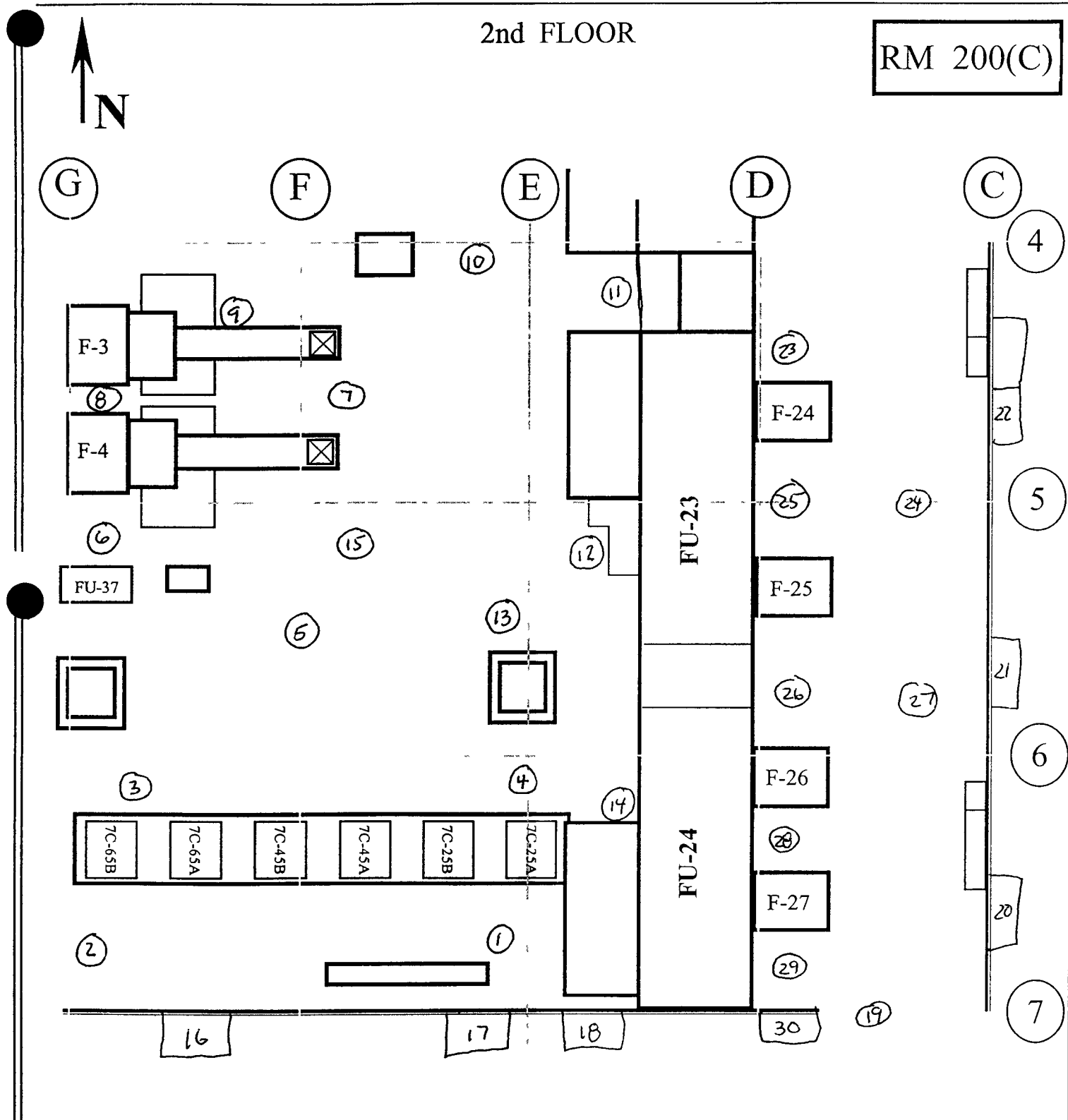
Date Reviewed. 1-27-00 RS Supervisor

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

2nd FLOOR

RM 200(C)



SURVEY PACKAGE TRACKING FORM

[illegible]

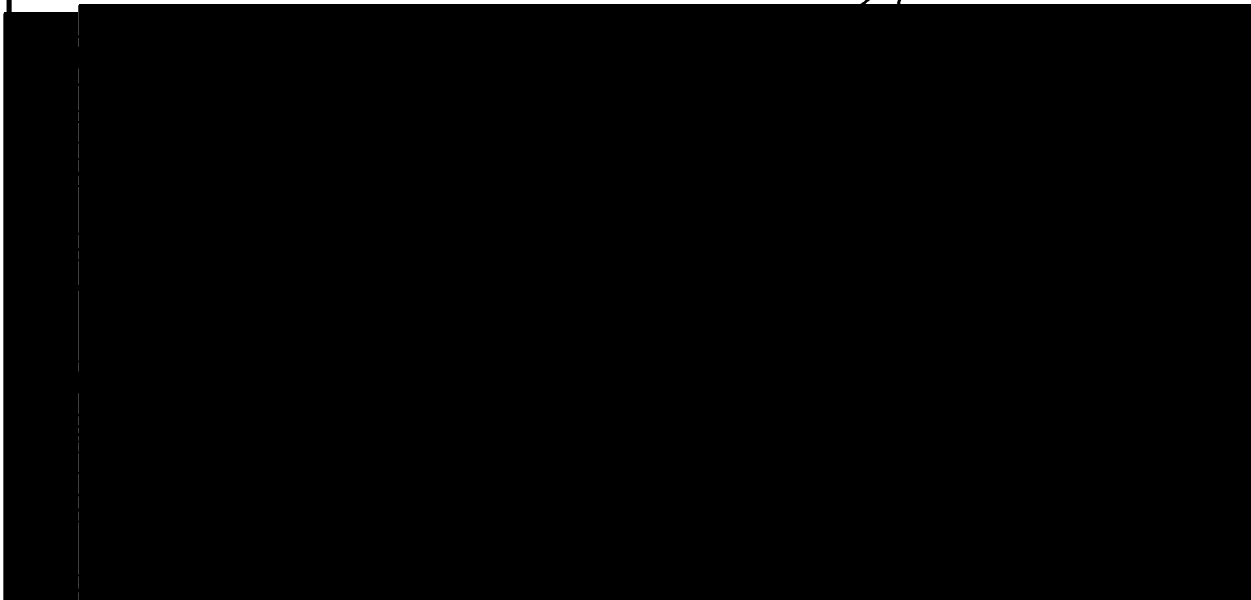
INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area D		Survey Unit N/A		Area (m ²) 640	
Survey Unit Description South West corner of room 200, 2 nd floor of Building 707 Area is South of Column K-4 and West of Column G-5 Building 707 radiological areas are posted as fixed contamination areas Building 707 radiological areas are posted as fixed contamination areas					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	55	45	0	0	55
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

75

148/466

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707
Survey Area: D	Survey Unit: N/A
Survey Unit Description: SOUTH WEST CORNER OF ROOM 200, 2 ND FLOOR OF BUILDING 707 AREA IS SOUTH OF COLUMN K-4 AND WEST OF COLUMN G-5 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads Special security requirements for access to 2 nd floor	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation:	
	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID 99-0002		Building 707
Survey Area D		Survey Unit N/A
Survey Unit Description: South West corner of room 200, 2 nd floor of Building 707 Area is South of Column K-4 and West of Column G-5 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>30 <u>unbiased</u> survey points uniformly distributed throughout the area</p> <p>25 <u>biased</u> survey points at the following types of areas</p> <ul style="list-style-type: none"> - Points around floors adjacent to internally contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, etc - Point(s) near plenum airlocks - Tanks having the potential for being internally contaminated - Near waste drum storage areas <p>CEILINGS/WALLS > 2 meters</p> <p>30 <u>biased</u> surveys (divided evenly between wall and ceiling when possible) with focus on following areas</p> <ul style="list-style-type: none"> - Walls behind process lines - Tops/sides of plenums - Stained or discolored areas - Areas around pipe or other penetrations - Other areas of potential concern based on RCT judgement/experience <p>EQUIPMENT</p> <p>45 <u>biased</u> survey points on equipment with one or more samples from</p> <ul style="list-style-type: none"> - Equipment which has visible leaks or contained spills beneath them - Survey points at exhaust ducts - 5 survey points on top of overhead piping (where locations are accessible) - Other areas of potential concern based on RCT judgement/experience 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707
Survey Area. D (640 m ²)		Survey Unit N/A
Survey Unit Description: South West corner of room 200, 2 nd floor of Building 707 Area is South of Column K-4 and West of Column G-5 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 55 1 m ² surface scans shall be taken at each location identified for surface activity measurements Locations found above the DCGL shall be documented CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NONE (2 nd Floor of 707 does not have painted floors)	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: D (640 m ²)	Survey Unit N/A
Survey Unit Description: South West corner of room 200, 2 nd floor of Building 707 Area is South of Column K-4 and West of Column G-5 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: D	Survey Unit: N/A
Survey Unit Description. South West corner of room 200, 2 nd floor of Building 707 Area is South of Column K-4 and West of Column G-5 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Building 707	
Survey Area: D	Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>		
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	1	<i>[Signature]</i>
Total Activity Surveys	1	<i>[Signature]</i>
Exposure Rate Surveys	N/A	N/A
Removable Surveys	1	<i>[Signature]</i>
Media Samples	N/A	N/A
Volumetric Samples	N/A	N/A
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	1	<i>[Signature]</i>
Total Activity Surveys	1	<i>[Signature]</i>
Exposure Rate Surveys	N/A	N/A
Removable Surveys	1	<i>[Signature]</i>
Media Samples	N/A	N/A
Volumetric Samples	N/A	N/A
Comments		

COPY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # 837	Serial # 1233
Cal Due 4-10-00	Cal Due 5-17-00	Cal Due 5-11-00
Bkg 0.1 cpm	Bkg 0.2	Bkg 3.0 cpm
Efficiency 33%	Efficiency 33%	Efficiency 20.63%
MDA 115 dpm	MDA 12.9	MDA 52.2 dpm
Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model BC-4	Model
Serial # 833	Serial # 872	Serial #
Cal Due 7-14-00	Cal Due 4-12-00	Cal Due N/A
Bkg 4.4 cpm	Bkg 4.6 cpm	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA 102.4 dpm	MDA 104.5 dpm	MDA

Survey Type: Contamination

Building 707

Location RM 200(D)

Purpose Reconnaissance Level Characterization

RWP # 99-707-1204

Date 1-27-00 Time 1300

Comments Ceiling / Walls > 2 meters: Biased survey points
1 min. pats and swipes

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	>2 W	0	20	0	16	C	0	-24	-5
2	>2 W	0	36	10	17	C	0	120	0
3	>2 W	0	0	5	18	C	0	32	-5
4	>2 W	0	16	0	19	C	0	-44	0
5	>2 W	0	8	0	20	C	0	-32	5
6	>2 W	0	-28	-5	21	C	0	0	5
7	>2 W	0	-12	5	22	C	0	0	15
8	C	0	48	5	23	C	0	-32	-15
9	C	0	0	0	24	C	0	28	5
10	C	0	28	15	25	C	0	4	5
11	C	3	-12	10	26	C	0	36	0
12	C	0	16	-5	27	C	0	0	5
13	C	0	-32	0	28	C	0	52	-5
14	C	0	24	-5	29	C	0	56	5
15	C	0	-12	-5	30	C	0	-8	15

Date Reviewed. 1-28-00 RS Supervision:

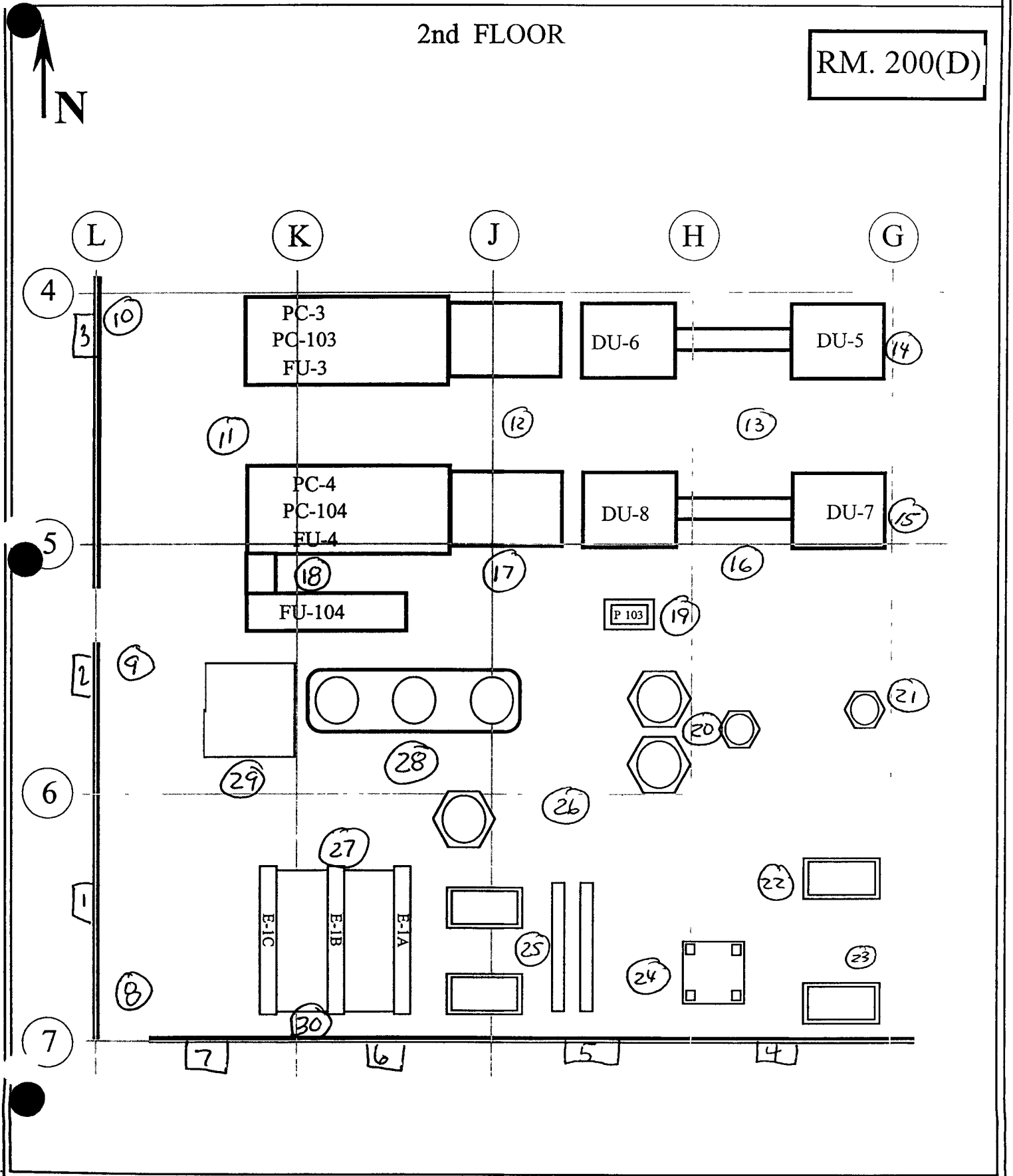
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

2nd FLOOR

RM. 200(D)



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3265</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>2 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>2101%</u>
MDA <u>11.5 dpm</u>	MDA <u>12.9 dpm</u>	MDA <u>51.3</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u> </u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u> </u>
Serial # <u>BC-833</u>	Serial # <u>BC-872</u>	Serial # <u> </u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>N/A</u>
Bkg <u>44 cpm</u>	Bkg <u>46 cpm</u>	Bkg <u> </u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u> </u>
MDA <u>102.4 dpm</u>	MDA <u>104.5 dpm</u>	MDA <u> </u>

Survey Type: Contamination

Building 707

Location Rm 200 (D)

Purpose Reconnaissance Level Characterization

RWP # 99-707-1204

Date 1-27-00 Time 1500

RCT _____

Print name / Signature / Emp #

Comments Floors / Walls < 2 meters unbiased survey points
1m² scans, 1 min pats and swipes see map for locations
Number / Letter (IA) denote columns

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1.	<2 G7 → H7	0	8	0	16	F	0	28	10
2.	<2 H7 → J7	0	12	19	17	F	0	-8	19
3	<2 J7 → K7	9	52	5	18	F	0	-20	24
4.	<2 K7 → L7	0	-12	29	19	F	0	-8	19
5.	<2 L7 → L6	0	-8	29	20	F	0	-40	24
6	<2 L6 → L5	0	48	0	21	F	0	72	34
7	<2 L5 → L4	0	12	19	22	F	0	-8	10
8	F	0	16	19	23	F	0	76	5
9	F	0	-4	5	24	F	0	24	15
10	F	0	-8	10	25	F	0	20	19
11.	F	6	-8	10	26	F	0	12	10
12	F	0	8	19	27	F	0	4	43
13	F	0	48	10	28	F	0	32	10
14.	F	0	-24	10	29	F	0	24	24
15	F	0	16	15	30	F	0	0	5

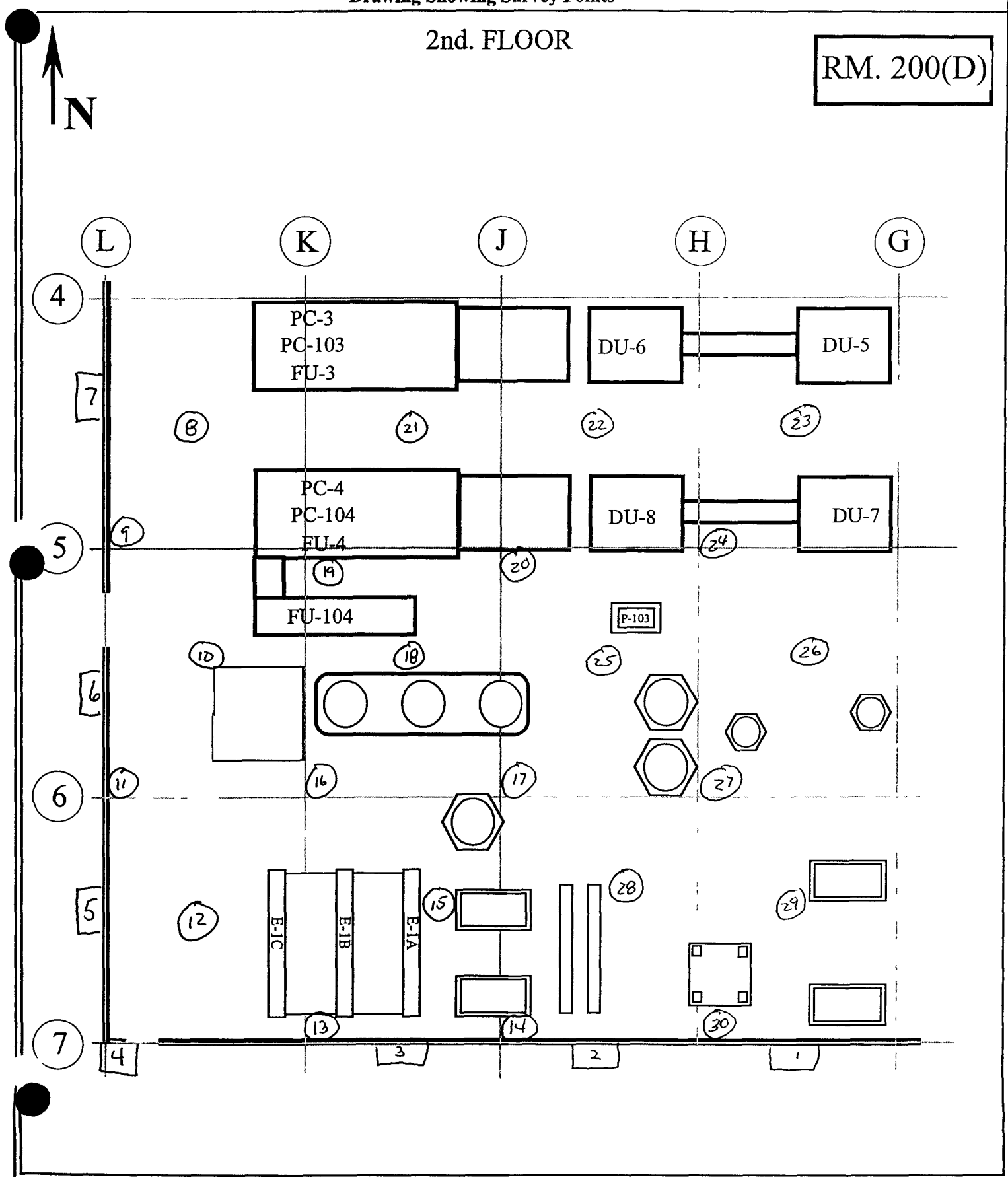
Date Reviewed: 1-28-00 RS Supervision: _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

2nd. FLOOR

RM. 200(D)



COPY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 879	Serial # 837	Serial # 1233
Cal Due 4-10-00	Cal Due 5-17-00	Cal Due 5-11-00
Bkg 0.1 cpm	Bkg 0.0 cpm	Bkg 2.0 cpm
Efficiency 33%	Efficiency 33%	Efficiency 20.63%
MDA 115 dpm	MDA 82 dpm	MDA 45 dpm
Mfg Eberline	Mfg Eberline	Mfg NeTech
Model BC-4	Model BC-4	Model Electra
Serial # 833	Serial # 872	Serial # 3265
Cal Due 7-14-00	Cal Due 4-12-00	Cal Due 7-3-00
Bkg 46 cpm	Bkg 45 cpm	Bkg 1.0 cpm
Efficiency 25%	Efficiency 25%	Efficiency 21.01%
MDA 1045 dpm	MDA 1034 dpm	MDA 35 dpm

Survey Type. Contamination

Building 707
 Location Rm 200 D
 Purpose Reconnaissance Level Characterization

RWP # 99-707-1204

Date 1-28-00 Time 1430

Comments Equipment Biased survey points 1 min pats and swipes
 see map for locations ① → ⑫ overheads #13-45 < 2 meters equipment

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Pipes	0	0	15	16	conditioner pumps	6	16	19
2	Duct	0	64	5	17	Top of DU-7	0	20	0
3	Wire tray	0	-20	0	18	Condensate pump	0	20	10
4	Steamline	0	18	19	19	R-4	3	56	5
5	Elect Box	0	24	5	20	PU-8	0	-4	0
6	Wire tray	0	12	5	21	P-104	0	4	0
7	Steam line	0	4	0	22	FU-104	0	24	5
8	Duct	0	-24	10	23	V-36C	0	-16	-10
9	Pipe process water	0	-24	15	24	V-36B	0	28	147
10	Heating water return	0	-12	10	25	V-36A	0	-12	14
11	Wire tray	0	52	5	26	Dryer	3	-8	-10
12	Wire tray	0	4	10	27	P-8	0	0	-5
13	E FU-3 Door	0	12	10	28	P-78	0	28	10
14	E FU-4 Door	0	32	14	29	V-49 surge TANK	0	20	5
15	conditioner pumps	0	56	33	30	V-33	3	36	119

Date Reviewed: 1-28-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY****Drawing Showing Survey Points**

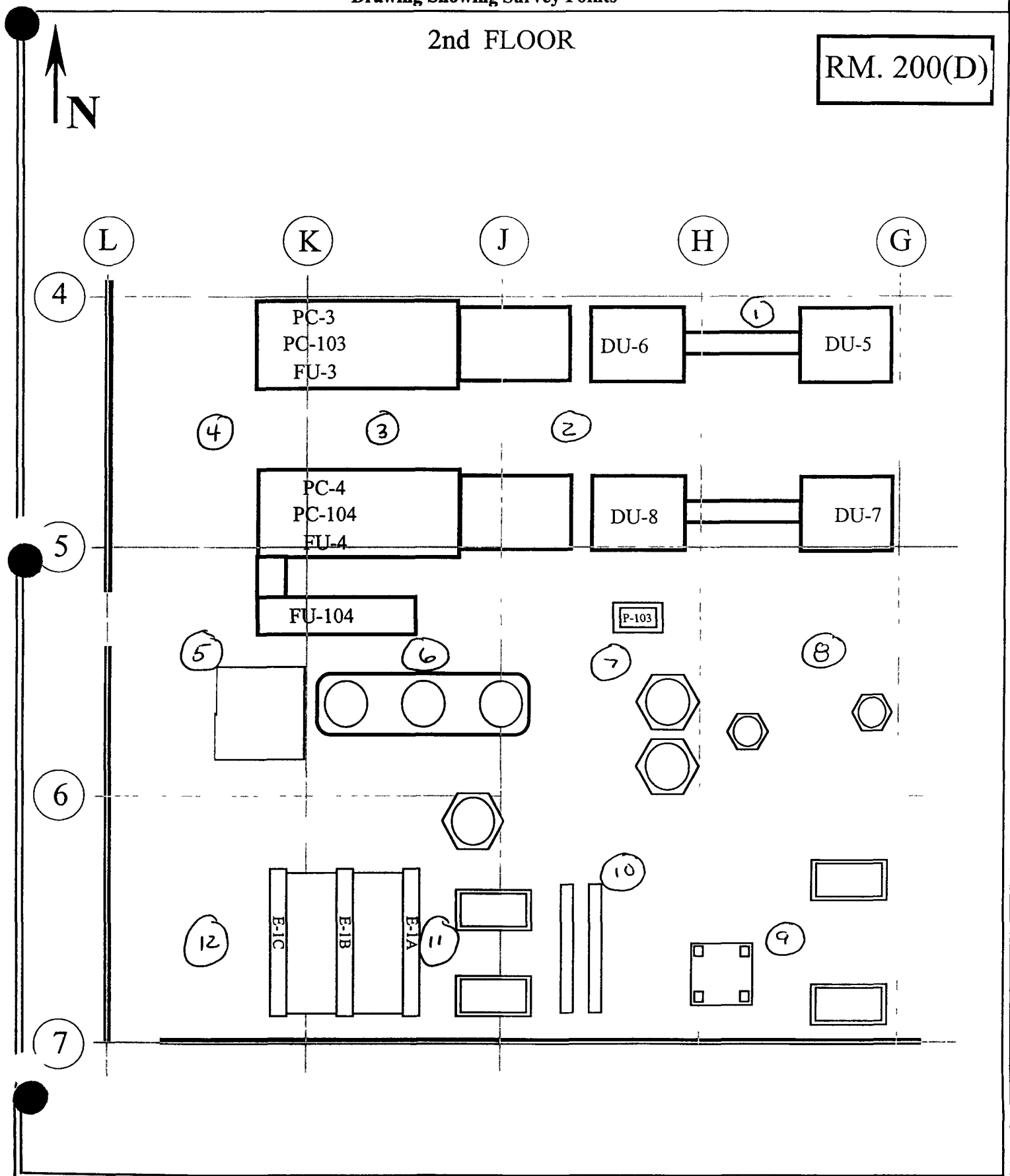
Pipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	V-32	0	12	14	61				
32.	T-34	0	4	0	62				
33	V-35	0	-4	143	63				
34.	XAS-1 Air seperator	0	32	0	64				
35	P-20B Hot water pump	3	4	-10	65				
36.	P-20A Hot water pump	0	-12	14	66				
37	Pipes	3	-40	33	67				
38.	E8-B	0	-8	19	68				
39	E-8-A	3	-4	14	69				
40	PIA cooling water purps	0	12	10	70				
41.	P/B cooling water pumps	3	-36	-5	71				
42	E-1A	0	28	0	72				
43.	E-1B	0	-48	0	73				
44.	E-1C	0	-24	-5	74				
45.	Exhaust Duct	0	20	-10	75				
46	END OF Survey				76				
47.					77				
48.					75				
49.					79				
50					80				
51.					81				
52					82				
53					83				
54.					84				
55					85				
56					86				
57					87				
58.					88				
59.					89				
60.					90				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

2nd FLOOR

RM. 200(D)

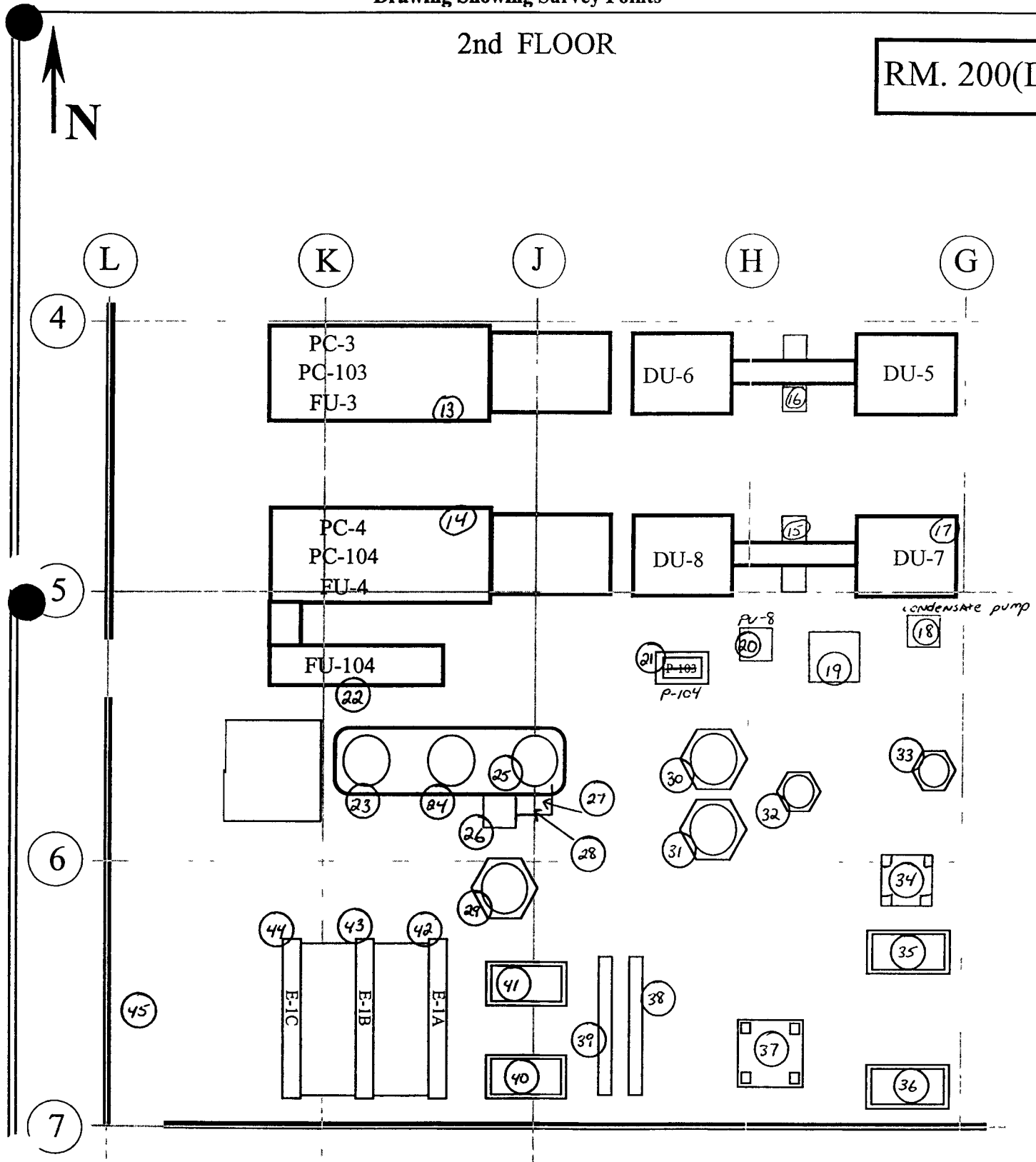


ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

2nd FLOOR

RM. 200(D)



COPY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # 837	Serial # 1518
Cal Due 4-12-00	Cal Due 5-17-00	Cal Due 6-29-00
Bkg 0.1	Bkg 0.0	Bkg 3.0
Efficiency 33%	Efficiency 33%	Efficiency 21.86%
MDA 11.5	MDA 8.2	MDA 49.3

Survey Type Contamination

Building 707
 Location ROOM 200 (D)
 Purpose Reconnaissance Level Characterization

RWP # 99-707-1204

Date 1-28-00 Time 1430

Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model BC-4	Model
Serial # 833	Serial # 872	Serial #
Cal Due 7-14-00	Cal Due 4-12-00	Cal Due
Bkg 46.0	Bkg 45.0	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA 104.5	MDA 103.4	MDA

RCT

Print name / Signature / Emp #

Comments FLOOR/WALL BIASED < 2 METERS - 25 POINTS
 1m² SCANS - 1 MIN. PALS AND SWIPES (SEE MAP FOR LOCATIONS)

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F Duct	0	-44	19	16	F Tanks	3	-24	5
2	F Duct	0	-16	32	17	F Tank	3	44	28
3	F Pipes	0	32	14	18	F Tank	0	24	9
4	F Door	0	-4	32	19	F Tank	0	8	19
5	F Door	0	-4	19	20	F Pump	3	0	14
6	F Tank	0	32	5	21	F Pump	0	28	14
7	F Tank	0	20	14	22	F Pipes	0	0	32
8	F Drain	0	4	14	23	F Pump	0	-12	28
9	F Pump	0	-16	19	24	F Pump	0	32	19
10	F Drain	0	-12	28	25	F Tank	0	84	9
11	F Filter FU-104	0	-16	19	26				
12	F Tanks	0	80	9	27				
13	F Pipes, pump	3	20	23	28				
14	F SE Duct	0	36	24	29				
15	F Pipe	6	-12	82	30				

NA

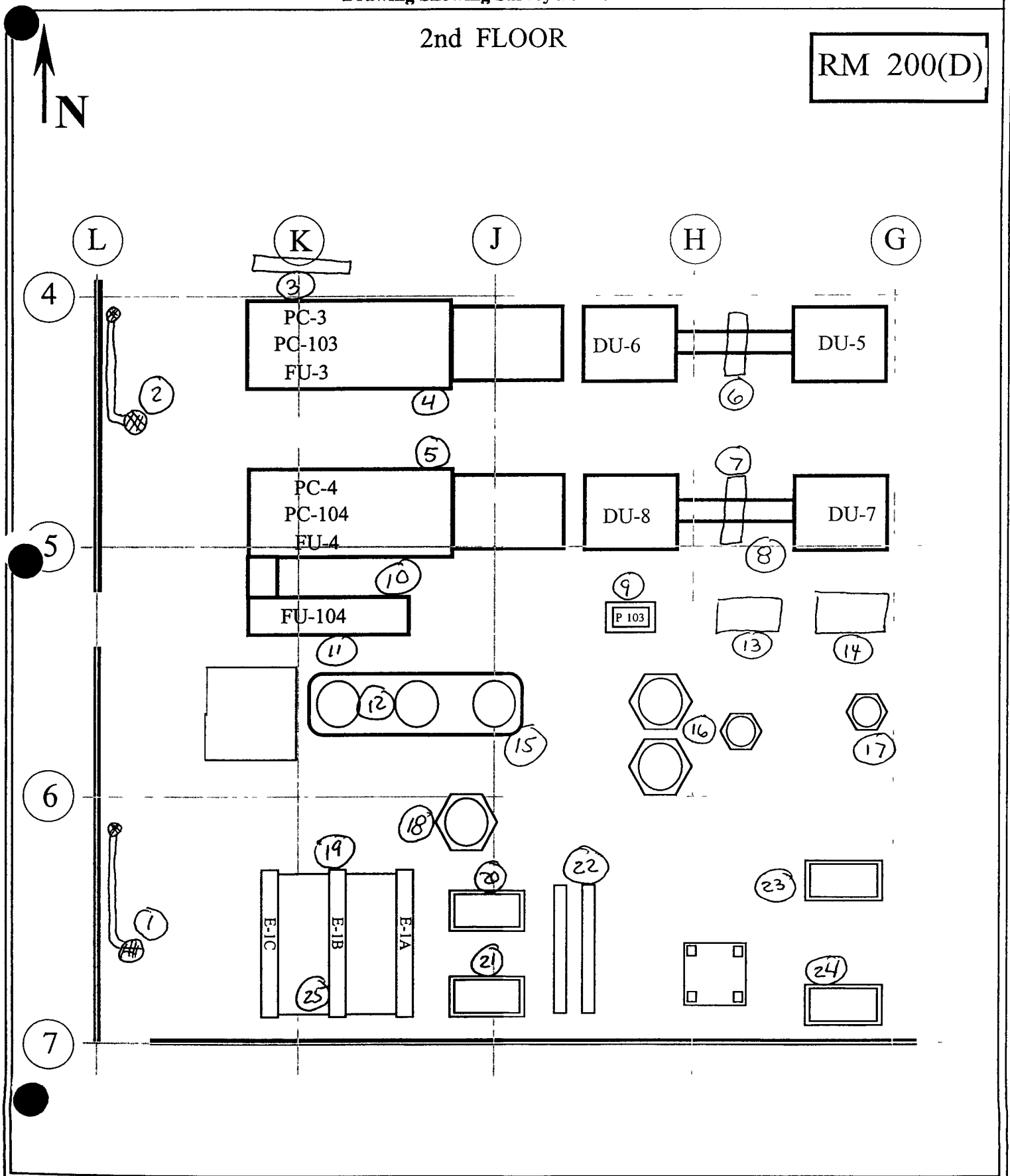
Date Reviewed 1-28-00 RS Supervision.

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

2nd FLOOR

RM 200(D)



SURVEY PACKAGE TRACKING FORM

[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area E		Survey Unit N/A		Area (m ²) 841	
Survey Unit Description East half of room 210, 2 nd floor of Building 707 Area is East of Columns G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas					
Survey Type			Classification		
RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	65	45	0	0	65
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building 707
Survey Area: E	Survey Unit N/A
Survey Unit Description: EAST HALF OF ROOM 210, 2 ND FLOOR OF BUILDING 707 AREA IS EAST OF COLUMNS G-7, G-9, G-11 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads Special security requirements for access to 2 nd floor	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation: <div style="background-color: black; height: 250px; width: 100%;"></div>	
<small>RESS Manager Printed Name</small>	<small>Employee #</small>
<small>RESS Manager Signature</small>	<small>Date</small>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID 99-0002		Building 707
Survey Area E		Survey Unit N/A
Survey Unit Description: East half of room 210, 2 nd floor of Building 707 Area is East of Columns G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>30 unbiased survey points uniformly distributed throughout the area</p> <p>35 biased survey points at the following types of areas</p> <ul style="list-style-type: none"> - Points around floors adjacent to internally contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, etc - Point(s) near plenum airlocks - Tanks having the potential for being internally contaminated - Areas of potential concern based on RCT judgement/experience - Near waste drum storage areas <p>CEILINGS/WALLS > 2 meters</p> <p>30 biased surveys (divided evenly between wall and ceiling when possible) with focus on following areas</p> <ul style="list-style-type: none"> - Walls behind process lines - Tops/sides of plenums - Stained or discolored areas - Areas around pipe or other penetrations - Areas of potential concern based on RCT judgement/experience <p>EQUIPMENT</p> <p>45 biased survey points on equipment with one or more samples from</p> <ul style="list-style-type: none"> - Equipment which has visible leaks or contained spills beneath them - Survey points at exhaust ducts - 5 survey points on top of overhead piping (where locations are accessible) - Other areas of potential concern based on RCT judgement/experience 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

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159/466

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building: 707
Survey Area: E		Survey Unit: N/A
Survey Unit Description: East half of room 210, 2 nd floor of Building 707 Area is East of Columns G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 65 1 m ² surface scans shall be taken at each location identified for surface activity measurements Locations found above the DCGL shall be documented CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NONE (2 nd Floor of 707 does not have painted floors)	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: E	Survey Unit N/A
Survey Unit Description: East half of room 210, 2 nd floor of Building 707 Area is East of Columns G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none">- Direct alpha contamination- Removable alpha contamination- Removable beta contamination- 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: E	Survey Unit N/A
Survey Unit Description: East half of room 210, 2 nd floor of Building 707 Area is East of Columns G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID 99-0002		Building 707	
Survey Area E		Survey Unit N/A	
Survey Type. Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion	RCT Supervisor	PRE	
Scan Surveys	1	[Signature]	
Total Activity Surveys	1	[Signature]	
Exposure Rate Surveys	N/A	N/A	
Removable Surveys	1	[Signature]	
Media Samples	N/A	N/A	
Volumetric Samples	N/A	N/A	
All Surveys and Samples Accounted For	RCT Supervisor	PRE	
Scan Surveys	1	[Signature]	
Total Activity Surveys	1	[Signature]	
Exposure Rate Surveys	N/A	N/A	
Removable Surveys	1	[Signature]	
Media Samples	N/A	N/A	
Volumetric Samples	N/A	N/A	
Comments			

COPY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # 837	Serial # 3265
Cal Due 4-10-00	Cal Due 5-17-00	Cal Due 7-3-00
Bkg 0.2 cpm	Bkg 0.0 cpm	Bkg 2.0 cpm
Efficiency 33%	Efficiency 33%	Efficiency 21.01%
MDA 12.9 dpm	MDA 8.2 dpm	MDA 44.2 dpm
Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model BC-4	Model
Serial # BC-833	Serial # BC-872	Serial # N/A
Cal Due 7-14-00	Cal Due 4-12-00	Cal Due
Bkg 42 cpm	Bkg 44 cpm	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA 100.3 dpm	MDA 102.4 dpm	MDA

Survey Type Contamination

Building 707
 Location Rm 210 (E)
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 1-31-00 Time 1100

RCT

Print name / Signature / Emp #

Comments Floor / Walls < 2 meters unbiased survey points
 1m² scans, 1min pats and swipes see map for locations
 Number / Letter (1A) denote columns

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F	6	12	10	16	F	0	28	0
2	F	0	8	5	17	F	0	-8	0
3	F	0	-28	15	18	F	0	0	-5
4	F	0	-32	-5	19	F	3	-16	24
5	F	0	16	5	20	F	3	20	24
6	F	0	12	0	21	F	0	0	15
7	F	3	16	5	22	F	0	68	19
8	F	3	40	0	23	F	6	12	10
9	< 2 W C10 → C11	0	0	5	24	F	0	40	29
10	< 2 W C8 → C9	3	40	15	25	F	3	32	5
11	< 2 W C7 → C8	0	-16	19	26	F	0	48	5
12	F	0	20	5	27	F	6	20	5
13	< 2 W C7 → D →	0	72	19	28	F	0	32	29
4	F	0	-16	10	29	F	0	-28	-5
5	F	0	-4	0	30	< 2 W F7 → C7	0	88	34

Date Reviewed: 2-7-00 RS Supervision:

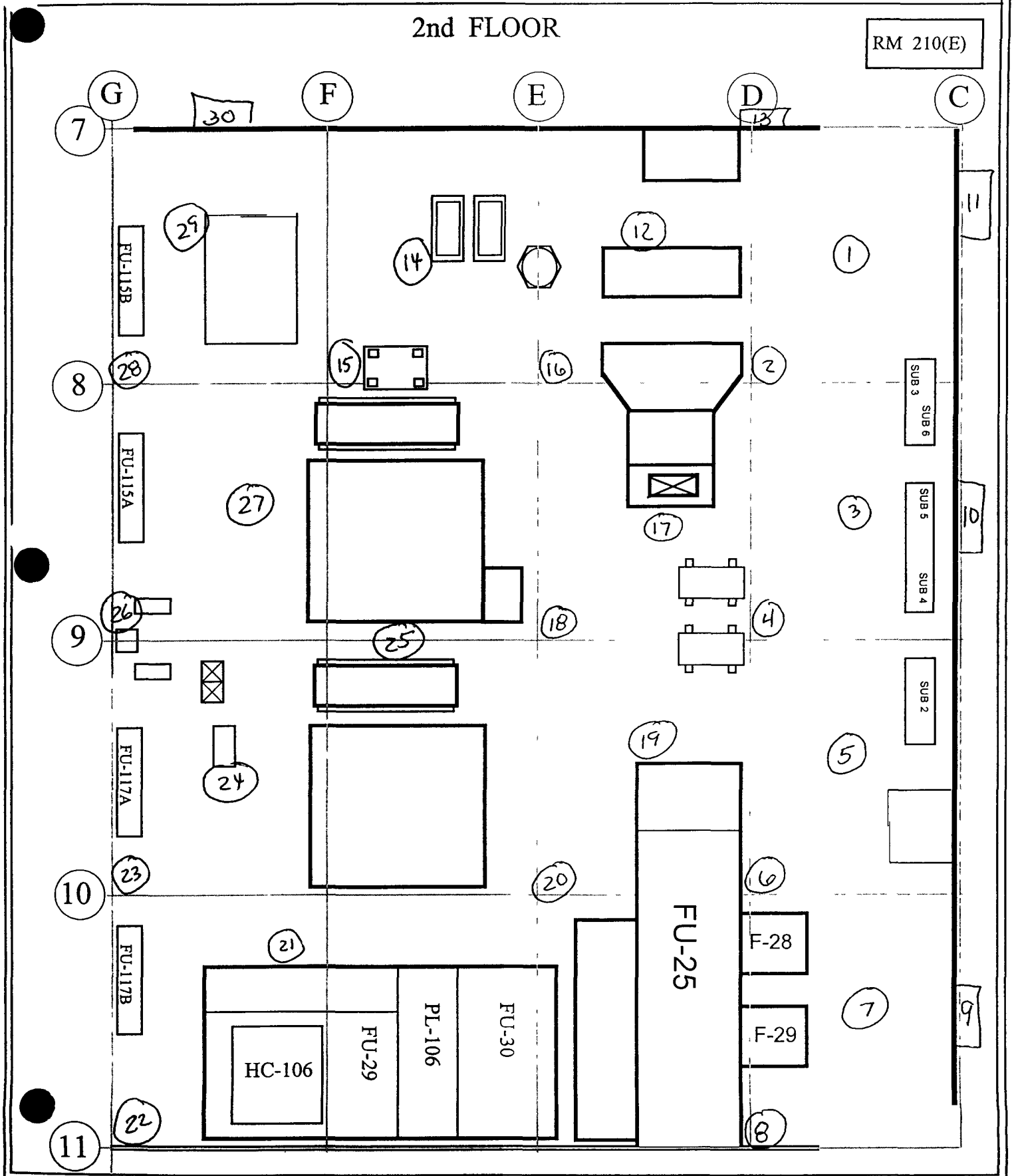
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

2nd FLOOR

RM 210(E)



COPY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # 837	Serial # 1518
Cal Due 4-10-00	Cal Due 5-17-00	Cal Due 6-29-00
Bkg 0.2 cpm	Bkg 0.1 cpm	Bkg 1.0 cpm
Efficiency 33%	Efficiency 33%	Efficiency 21.86%
MDA 12.9 dpm	MDA 11.5 dpm	MDA 33.7 dpm
Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model BC-4	Model
Serial # BC-833	Serial # BC-872	Serial # N
Cal Due 7-14-00	Cal Due 4-12-00	Cal Due A
Bkg 41 cpm	Bkg 42 cpm	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA 99.2 dpm	MDA 100.3 dpm	MDA

Survey Type: Contamination

Building 707

Location Room 210 (E)

Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 2-1-00 Time 1500

RCT

Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Biased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F-Fan F-29	3	16	5	16	F-Filter Fu-115A	0	32	14
2	F-P-trap	0	-68	9	17	F-Filter Fu-115B	3	-20	19
3	F-Fan F-28	0	20	14	18	F-Pad	0	16	32
4	F-Door	0	52	9	19	F-Pump	0	12	0
5	F-Door	0	-32	5	20	F-Tank	0	-16	5
6	F-Door	0	4	14	21	F-Door	3	-32	28
7	F-Fan	0	4	5	22	F-Door	0	-20	5
8	F-Door	0	12	5	23	F-Duct	0	0	23
9	F-Door	3	-16	9	24	F-Tank	0	-16	0
10	F-Door	0	4	28	25	F-Tank	0	0	5
11	F-Door	3	44	19	26	F-Pipes	0	0	19
12	F-Filter Fu-117B	3	-20	32	27	F-Tank	0	60	19
13	F-P-trap	0	-36	5	28	F-Pipes	0	28	14
14	F-Filter Fu-117A	0	-36	14	29	F-Pipes	0	-12	5
15	F-Tanks	0	20	19	30	F-Tank	3	-12	9

Date Reviewed: 2-7-00 RS Supervisor

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY****Drawing Showing Survey Points**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	F-Tank	0	-20	14	61				
32	F-Pipes	0	-12	9	62				
33	F-Compressor	0	-64	5	63				
34	F-Tank	3	-24	9	64				
35	F-Pipes	0	-16	19	65				
36					66				
37					67				
38					68				
39					69				
40					70				
41					71				
42					72				
43					73				
44					74				
45					75				
46					76				
47					77				
48					78				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

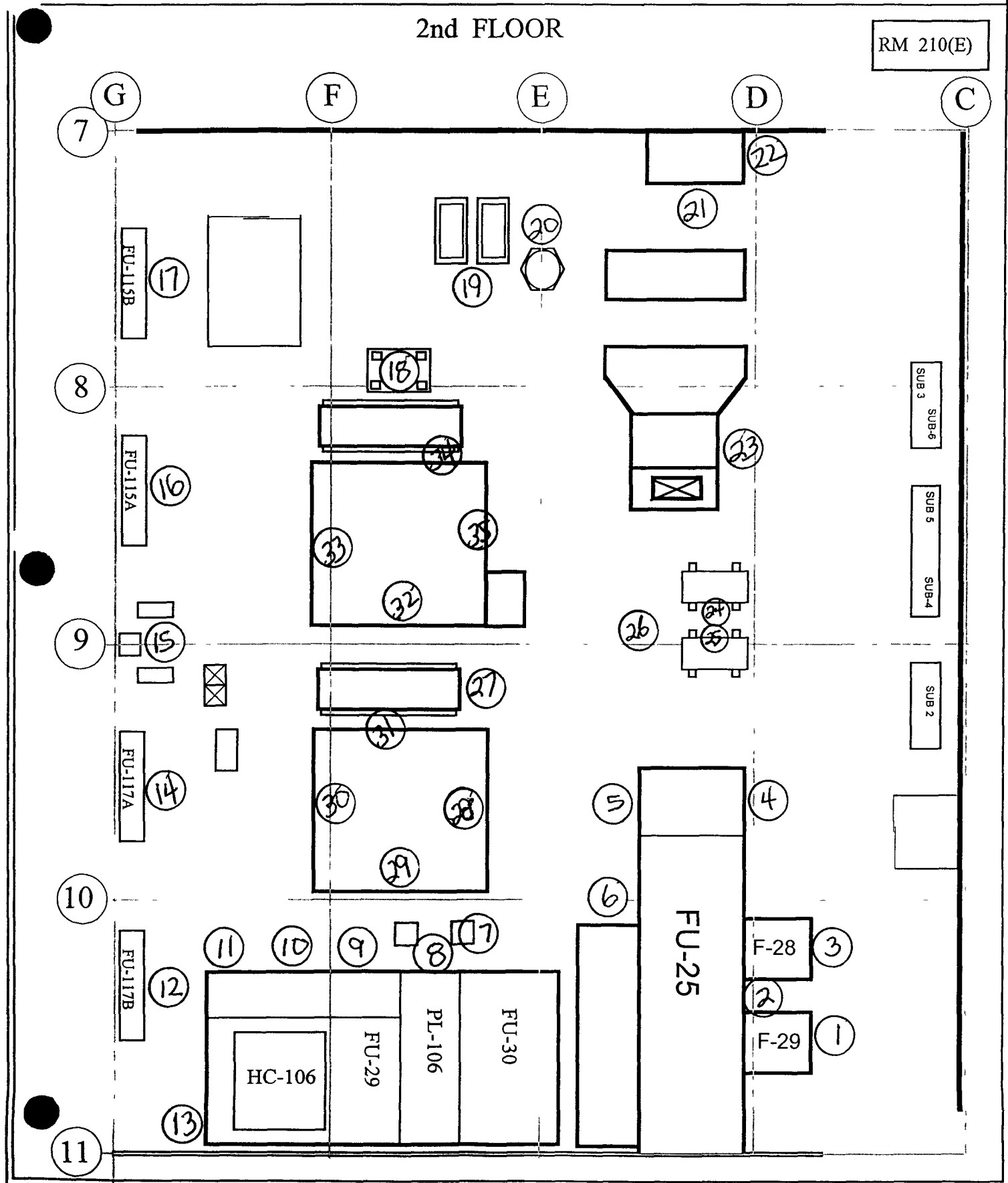
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

2nd FLOOR

RM 210(E)



COPY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.0 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.63%</u>
MDA <u>11.5 dpm</u>	MDA <u>8.2 dpm</u>	MDA <u>13.1 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>BC-833</u>	Serial # <u>BC-872</u>	Serial # <u>N/A</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u></u>
Bkg <u>45 cpm</u>	Bkg <u>42 dpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>103.4 dpm</u>	MDA <u>100.3 dpm</u>	MDA <u></u>

Survey Type: Contamination

Building 707
 Location Room 210 (E)
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 2-4-00 Time 1530

RCT Hershey / Hershey
 Print name / Signature

RCT Cloud / SPC Cloud
 Print name / Signature

Comments Ceiling / Walls > 2 meters Biased survey points
1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	C	0	-20	19	16	C	0	0	19
2	C	0	52 ⁵²	-5 ¹⁰⁻¹⁰⁰	17	C	6	52	5
3	C	0	0	15	18	C	0	20	29
4	C	3	-12	0	19	>2	0	-8	5
5	C	3	-8	15	20	>2	0	52	5
6	C	0	24	10	21	>2	6	-36	0
7	C	0	-8	0	22	>2	0	-16	10
8	C	0	16	-5	23	>2	3	-40	10
9	C	6	-8	5	24	>2	0	-56	10
10	C	0	-24	0	25	>2	3	-40	15
11	C	3	12	15	26	>2	0	44	15
12	C	0	4	0	27	>2	6	0	5
13	C	0	-12	10	28	>2	3	-16	5
4	C	0	+12	10	29	>2	0	-20	15
5	C	0	0	10	30	>2	6	40	10

Date Reviewed: 2-7-00 RS Supervision: Shunk

Print Name

Signature

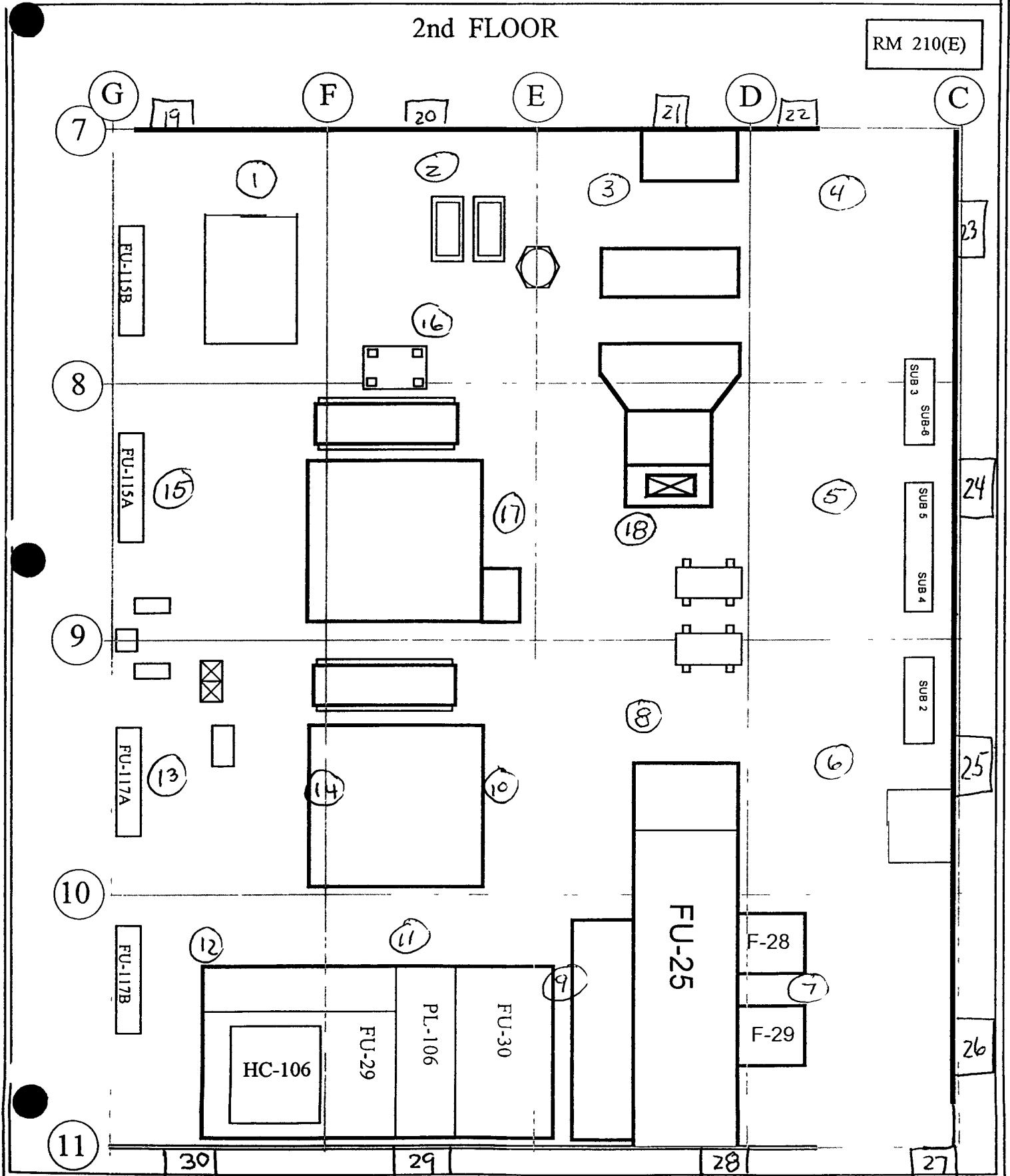
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

2nd FLOOR

RM 210(E)



COPY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.2 spm</u>	Bkg <u>0.1</u>	Bkg <u>0.0 α</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.63%</u>
MDA <u>12.9 dpm</u>	MDA <u>11.5</u>	MDA <u>13.2 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>833</u>	Serial # <u>872</u>	Serial # <u></u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>N/A</u>
Bkg <u>41 spm</u>	Bkg <u>42 spm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>99.2 dpm</u>	MDA <u>100.3 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location Equipment & Overhead Room (E)
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 2-1-00 Time 1600

RCT _____
 Print name / Signature / Emp #

Comments Equipment Based survey points 1 min pcts and swipes
See map for locations
(30)-(45) in overheads

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	FU-25 Roof	0	-16	44	16	FU-117A	0	-12	10
2	F-29	3	-20	34	17	FU-115A	0	-24	50
3	P-Trap	0	12	44	18	FU-115B	0	-40	24
4	F-28	0	24	19	19	BN	0	0	0
5	FU-25 Roof	0	-32	150	20	Pump	3	-8	29
6	FU-25 Door	0	12	0	21	T-44	0	-32	0
7	FU-25 Door	0	20	48	22	AHC-1	0	-16	15
8	Door	3	44	34	23	450-498	0	12	44
9	Roof	0	8	-5	24	450-497	0	12	34
10	FU-30 Ppe	0	-8	5	25	RC-1B Pump	3	-8	-5
11	HC-106 Door	3	24	19	26	RC 1B Super Heater	0	-24	0
12	FU-29 Door	0	-8	19	27	RC-1A	0	-16	0
13	FU-29 Door	0	-32	44	28	RC 1A Super Heater	0	12	-19
4	P-Trap	0	-12	10	29	Pump	0	-4	0
5	FU-117B	0	-16	-10	30	>2M Duct	3	-8	-10

Date Reviewed. 2-7-00 RS Supervision: _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Pipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	>2M Duct	3	-4	0	61				
32	>2M Duct	0	4	-5	62				
33	>2M Duct	3	16	-10	63				
34	>2M Duct	3	-8	5	64				
35	>2M Steamline	0	-8	0	65				
36	>2M Duct	0	-8	-10	66				
37	>2M Duct	3	-16	5	67				
38	>2M Hot water supply	0	-16	0	68				
39	>2M Duct	6	-16	-19	69				
40	>2M Duct	0	-24	-15	70				
41	>2M Duct	0	-24	-10	71				
42	>2M Hot water supply	3	16	-10	72				
43	>2M Duct	0	32	-5	73				
44	>2M Duct	3	36	-10	74				
45	>2M Duct	3	-8	-5	75				
46	END of Survey				76				
47					77				
48					75				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

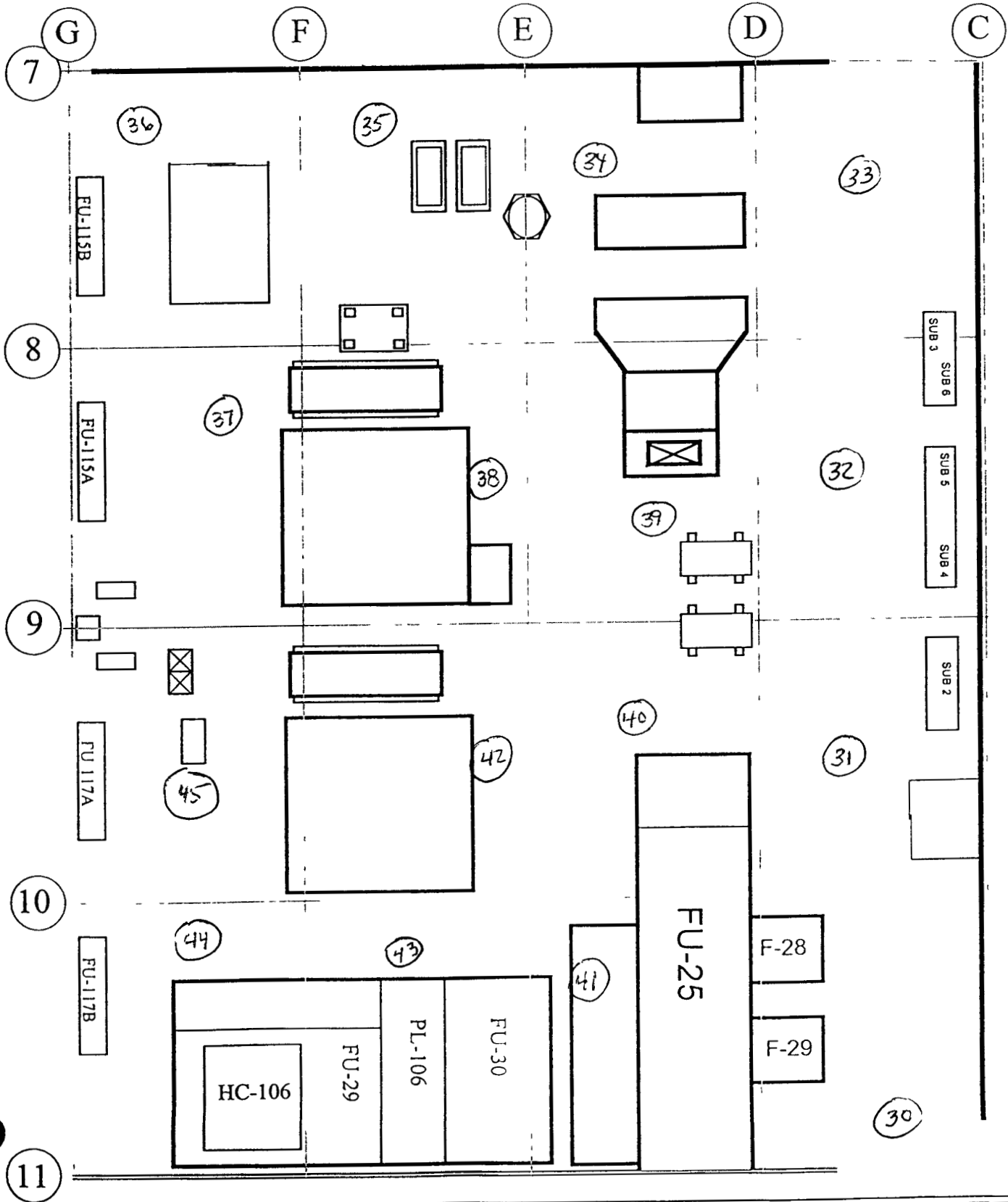
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

2nd FLOOR

RM 210(E)



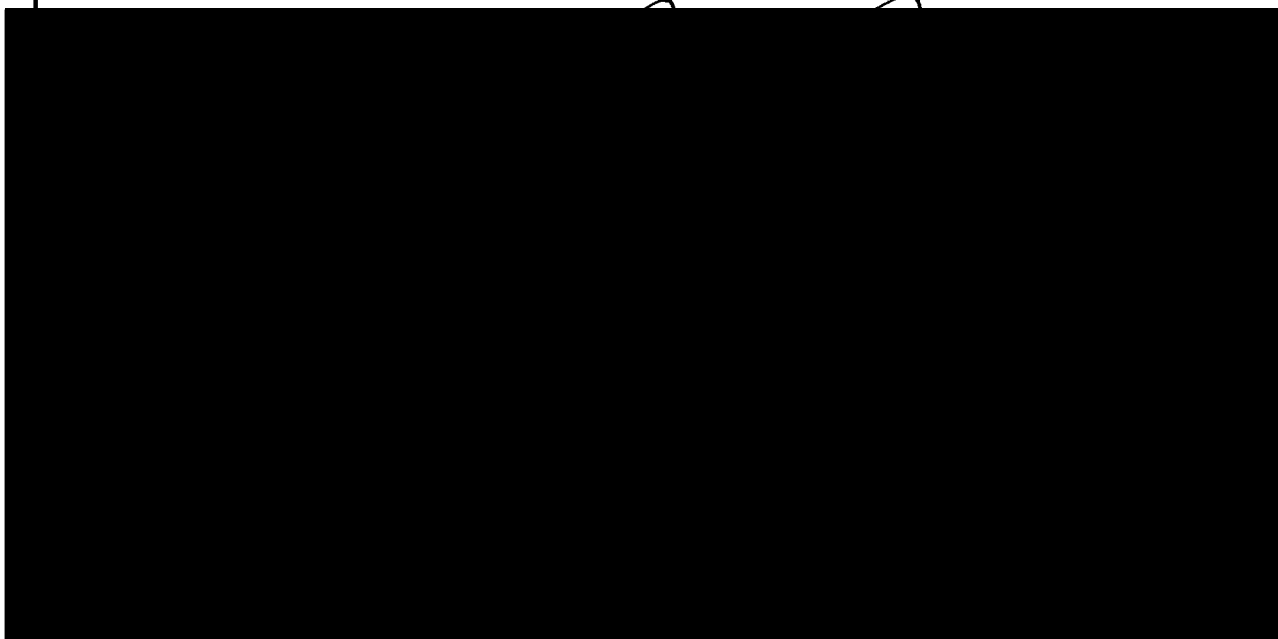
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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area F		Survey Unit N/A		Area (m ²) 841	
Survey Unit Description West half of room 210, 2 nd floor of Building 707 Area is West of Columns G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	65	45	0	0	65
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707
Survey Area: F	Survey Unit: N/A
Survey Unit Description: WEST HALF OF ROOM 210, 2 ND FLOOR OF BUILDING 707 AREA IS WEST OF COLUMNS G-7, G-9, G-11 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads Special security requirements for access to 2 nd floor	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation:	



SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID. 99-0002		Building. 707
Survey Area: F		Survey Unit N/A
Survey Unit Description: West half of room 210, 2 nd floor of Building 707 Area is West of Columns G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>30 <u>unbiased</u> survey points uniformly distributed throughout the area</p> <p>35 <u>biased</u> survey points at the following types of areas</p> <ul style="list-style-type: none"> - Points around floors adjacent to internally contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, etc - Point(s) near plenum airlocks - Tanks having the potential for being internally contaminated - Areas of potential concern based on RCT judgement/experience - Near waste drum storage areas <p>CEILINGS/WALLS > 2 meters</p> <p>30 <u>biased</u> surveys (divided evenly between wall and ceiling when possible) with focus on following areas</p> <ul style="list-style-type: none"> - Walls behind process lines - Tops/sides of plenums - Stained or discolored areas - Areas around pipe or other penetrations - Areas of potential concern based on RCT judgement/experience <p>EQUIPMENT</p> <p>45 <u>biased</u> survey points on equipment with one or more samples from</p> <ul style="list-style-type: none"> - Equipment which has visible leaks or contained spills beneath them - Survey points at exhaust ducts - 5 survey points on top of overhead piping (where locations are accessible) - Other areas of potential concern based on RCT judgement/experience 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707
Survey Area: F		Survey Unit N/A
Survey Unit Description: West half of room 210, 2 nd floor of Building 707 Area is West of Columns G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 65 1 m ² surface scans shall be taken at each location identified for non-scan surface activity measurements Locations found above the DCGL shall be documented CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NONE (2 nd Floor of 707 does not have painted floors)	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: F	Survey Unit N/A
Survey Unit Description: West half of room 210, 2 nd floor of Building 707 Area is West of Columns G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

*Page Superseded
Change #2
JG 01/06/99*

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building: 707
Survey Area: F	Survey Unit: N/A
Survey Unit Description: West half of room 210, 2 nd floor of Building 707 Area is West of Columns G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID. 99-0002	Building 707
Survey Area. F	Survey Unit N/A
Survey Unit Description: West half of room 210, 2 nd floor of Building 707 Area is West of Columns G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta measurements will NOT be taken unless otherwise directed by Radiological Engineering</u> Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

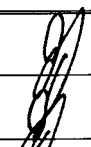
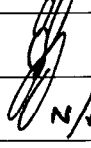
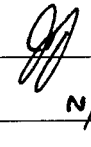
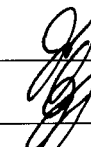
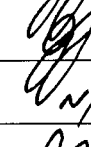
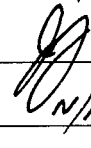
Page Superseded
Change #3
01/06/00

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: F	Survey Unit N/A
Survey Unit Description: West half of room 210, 2 nd floor of Building 707 Area is West of Columns G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS:	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 707	
Survey Area: F		Survey Unit N/A	
Survey Type Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys		1	
Total Activity Surveys		1	
Exposure Rate Surveys		N/A	N/A
Removable Surveys		1	
Media Samples		N/A	N/A
Volumetric Samples		N/A	N/A
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys		1	
Total Activity Surveys		1	
Exposure Rate Surveys		N/A	N/A
Removable Surveys		1	
Media Samples		N/A	N/A
Volumetric Samples		N/A	N/A
Comments All survey pts. identified on survey maps.			

ROCKWELL ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg _____	Mfg. _____	Mfg. _____	Survey Type: _____
Model _____	Model _____	Model _____	Building _____
Serial # _____	Serial # _____	Serial # _____	Location* _____
Cal Due _____	Cal Due _____	Cal Due _____	Purpose _____
Bkg _____	Bkg _____	Bkg _____	RWP # _____
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____
Mfg _____	Mfg _____	Mfg _____	Print name _____ Signature _____ Emp # _____
Model _____	Model _____	Model _____	RCT _____ / _____ / _____
Serial # _____	Serial # _____	Serial # _____	Print name _____ Signature _____ Emp # _____
Cal Due _____	Cal Due _____	Cal Due _____	
Bkg _____	Bkg _____	Bkg _____	
Efficiency _____	Efficiency _____	Efficiency _____	
MDA _____	MDA _____	MDA _____	

PRL # : _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1 _____	_____	_____	_____	26 _____	_____	_____	_____
2 _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33 _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

Date Reviewed: _____

RS Supervision: _____

Print Name

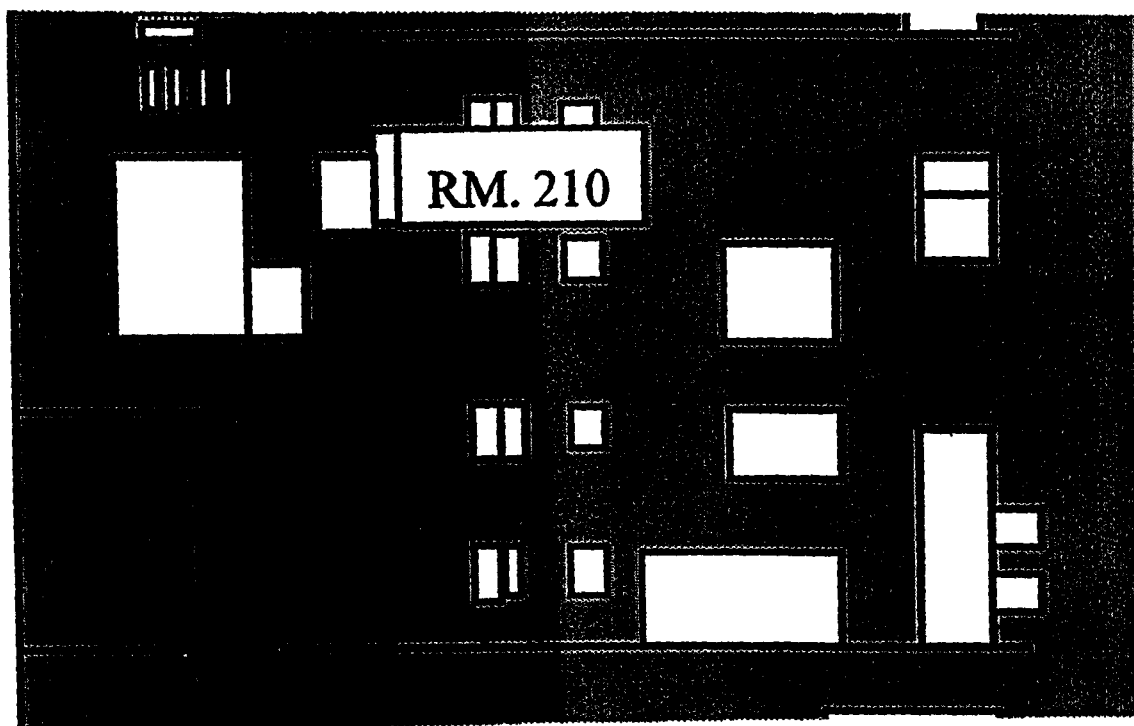
Signature

Emp #

CONVENTIONAL TECHNIQUE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3265</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.01%</u>
MDA <u>12.9 dpm</u>	MDA <u>115 dpm</u>	MDA <u>44 cpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>BC-333</u>	Serial # <u>BC-872</u>	Serial # <u>N/A</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u></u>
Bkg <u>41 cpm</u>	Bkg <u>42 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>99 dpm</u>	MDA <u>100.3 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location Rm 210 (F)
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 2-1-00 Time 1500

RCT _____
 Print name / Signature / Emp #

Comments Floor/Walls < 2 meters: unbiased survey points
1m² Scans 1min pats and stripes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	<2 W	3	36	0	16	<2 W K7 → J7	0	0	-10
2	F	0	12	10	17	F	0	28	0
3	F	0	-12	-10	18	F	0	-40	29
4	F	0	40	0	19	F	0	28	15
5	F	6	0	5	20	<2 W H7 → G7	0	40	5
6	F	0	-20	43	21	F	0	-4	10
7	F	0	0	19	22	F	0	-12	15
8	F	0	4	43	23	F	0	20	19
9	F	0	-56	19	24	F	0	12	5
10	<2 W L10 → L9	0	-20	19	25	F	0	0	24
11	F	0	28	24	26	F	0	-4	29
12	F	3	-16	0	27	F	0	44	24
13	<2 W L8 → L7	0	-12	29	28	F	3	28	24
14	F	3	-16	10	29	<2 W H11 → G11	0	-20	15
15	F	3	24	34	30	F	3	28	29

Date Reviewed 2-17-00 RS Supervision

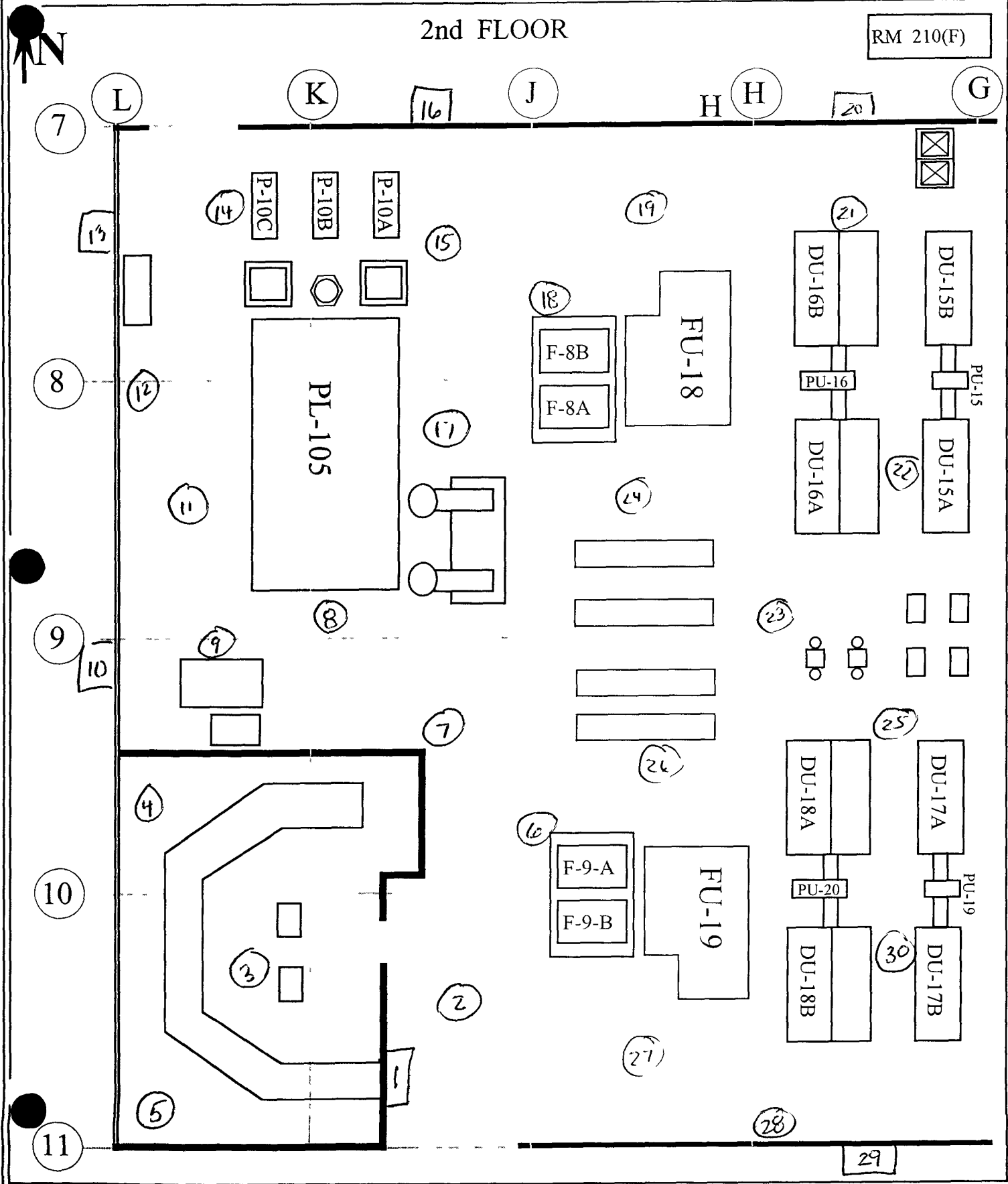
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL

Drawing Showing Survey Points

2nd FLOOR

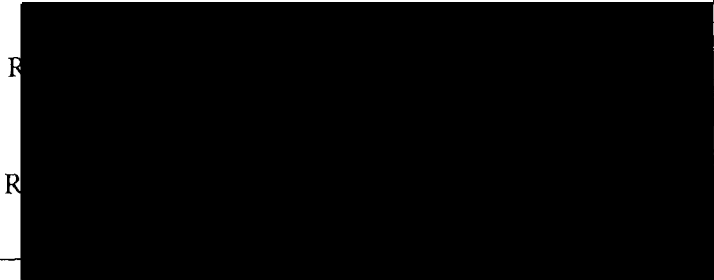
RM 210(F)



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

fg	Eberline	Mfg	Eberline	Mfg	NeTech
Model	Sac-4	Model	Sac-4	Model	Electra
Serial #	849	Serial #	837	Serial #	1233
Cal Due	4-10-00	Cal Due	5-17-00	Cal Due	5-11-00
Bkg	0.3 cpm	Bkg	0.1 cpm	Bkg	3 cpm
Efficiency	33%	Efficiency	33%	Efficiency	20.63%
MDA	13.9 dpm	MDA	11.5 dpm	MDA	52.2 dpm
Mfg	Eberline	Mfg	Eberline	Mfg	
Model	BC-4	Model	BC-4	Model	
Serial #	833	Serial #	872	Serial #	
Cal Due	7-14-00	Cal Due	4-12-00	Cal Due	
Bkg	3.5 cpm	Bkg	4.7 cpm	Bkg	
Efficiency	25%	Efficiency	25%	Efficiency	
MDA	92.5 dpm	MDA	105.5 dpm	MDA	

Survey Type Contamination
 Building 707
 Location Room 210 (F)
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 2-3-00 Time 1530Comments Equipment Biased survey points1 minute pats and swipes See map for locations31-45 overheads 2-17-00 31-45 overheads#7 contained contamination on Gasket 43,000 dpm (**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	AF-4	0	-8	-15	16	Pump	0	-8	0
2	PL-105 Door	0	-32	0	17	FU-17A	0	28	0
3	PL-105 Door	0	12	-15	18	PU-19	0	12	0
4	PL-105 Door	0	-28	-10	19	PU-18B	3	28	-5
5	PL-105 Door	0	28	-10	20	PU-20	0	-36	15
6	PL-105 Door	0	-8	5	21	CU-8A	0	-12	5
7	HC 105 Door	0	-8	19	22	Kathene 5-B	0	-24	-15
8	HP Pump	0	-4	-15	23	Kathene 6-A	3	76	-10
9	P-10C	0	32	10	24	332-77A	0	-12	-10
10	P-10B	0	0	10	25	FU-19 Door	0	-8	5
11	P-10A	3	68	-5	26	F-9 A	0	20	-5
12	F-8B	0	8	0	27	Pump Fans	3	44	10
13	PU-16	0	12	10	28	P TCAF	0	-32	0
14	DU-16B	0	-68	-5	29	Pump	6	-4	1937
15	PU-15	0	40	-10	30	Pump	0	12	285

Date Reviewed 2-17-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGIC****Drawing Showing Survey Points**

Point #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	Top AF-4	0	16	-5	61				
32	I Beam	0	0	0	62				
33	I Beam	0	-16	0	63				
34	HP Vac pipe	0	-16	15	64				
35	Duct	0	-12	15	65				
36	Duct	0	4	-5	66				
37	Kathene line	3	-12	19	67				
38	Fu-9B	0	-8	5	68				
39	Top DU/B	0	20	0	69				
40	Duct	0	4	0	70				
41	Duct	0	-32	-5	71				
42	Roof SOE Rm	0	12	-5	72				
43	Duct	3	-64	15	73				
44	Top F-8A	0	-8	-5	74				
45	Duct	3	8	0	75				
46	END of Survey				76				
47					77				
48					78				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

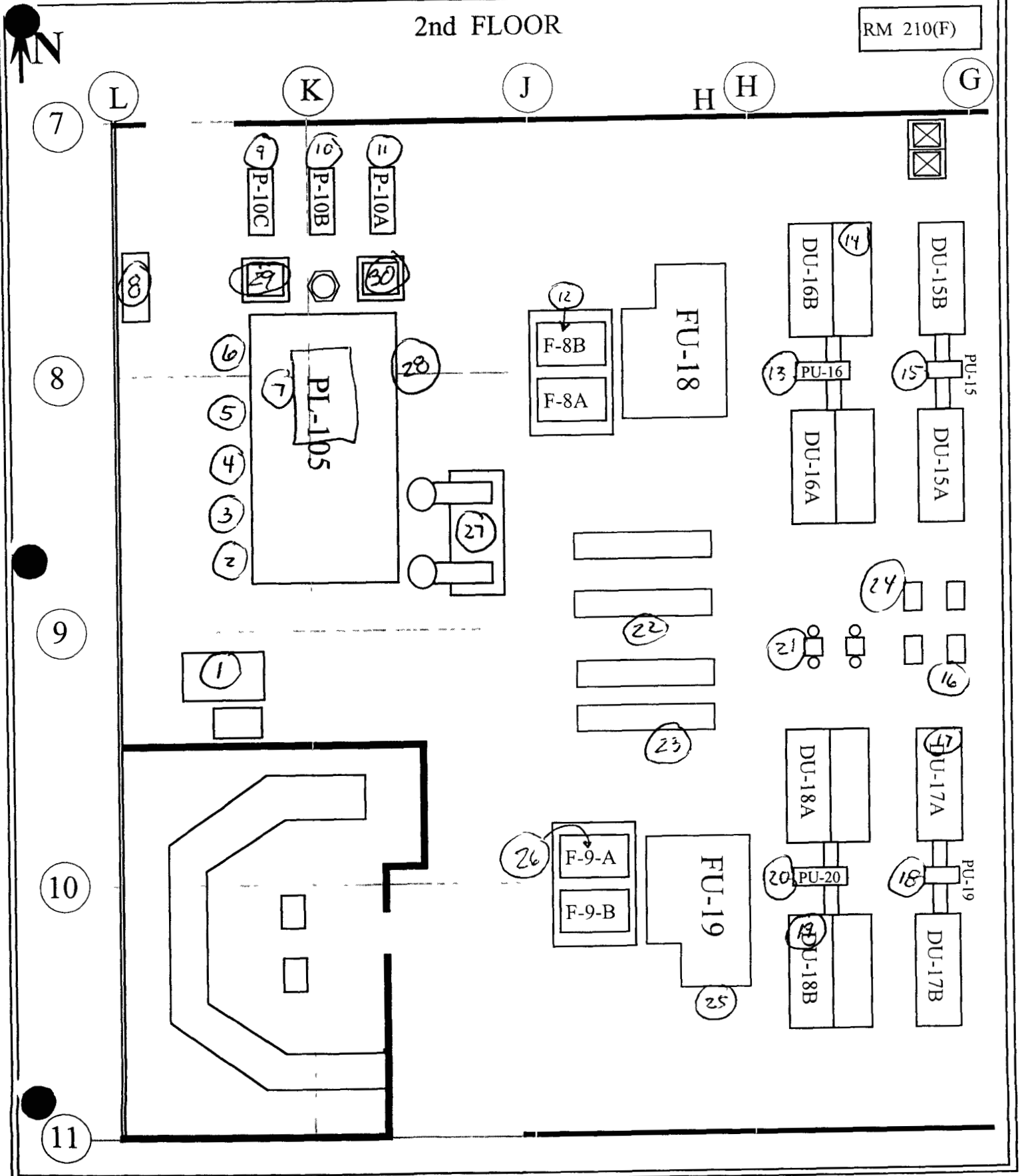
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

2nd FLOOR

RM 210(F)



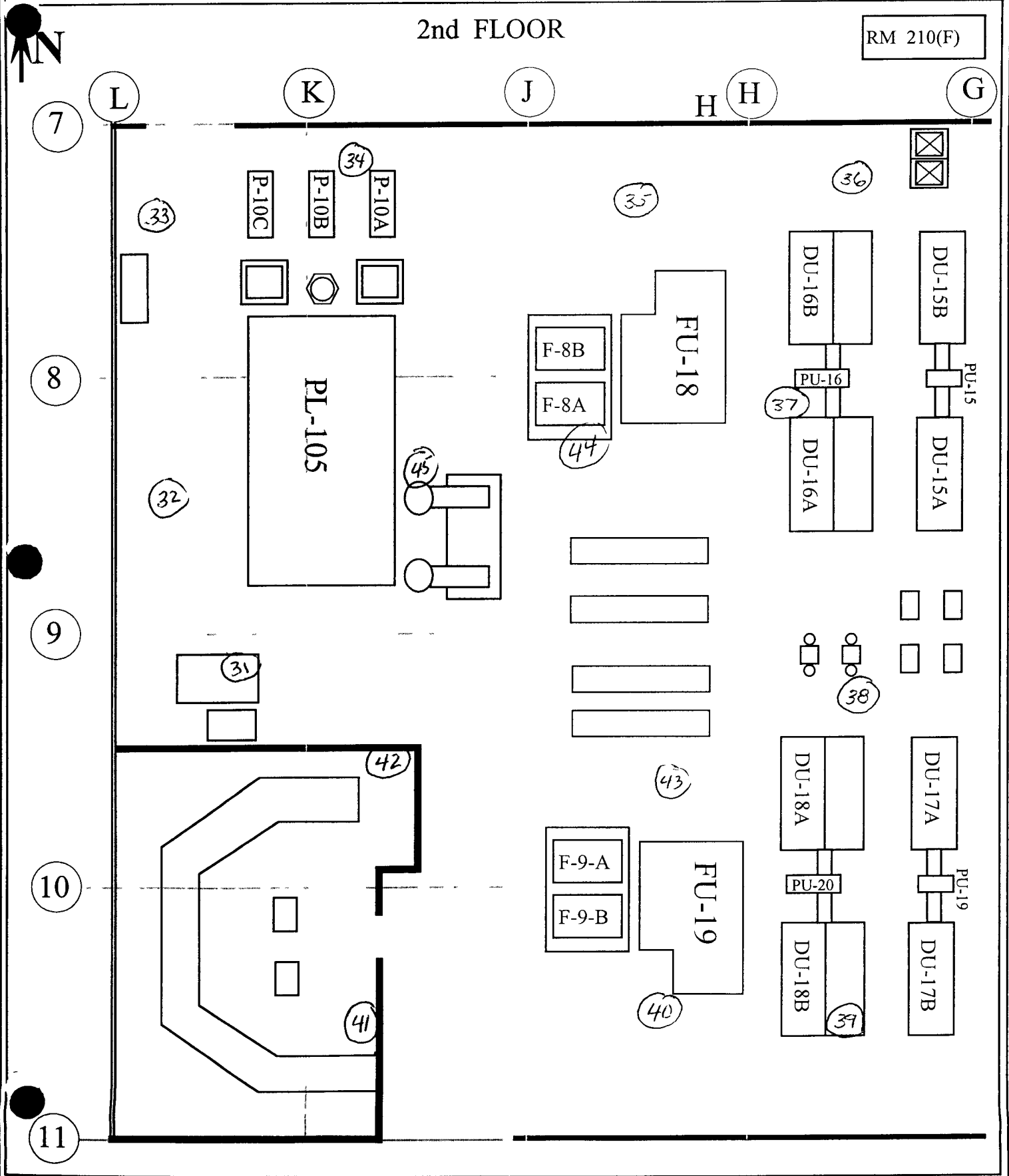
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SIVITY

Drawing Showing Survey Points

2nd FLOOR

RM 210(F)



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1518</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.3 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>33%</u>
MDA <u>13.9 dpm</u>	MDA <u>11.5 dpm</u>	MDA <u>33.7 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>833</u>	Serial # <u>872</u>	Serial # <u>A</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>A</u>
Bkg <u>35 cpm</u>	Bkg <u>47 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>92.5 dpm</u>	MDA <u>105.5 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location Room 210 (F)
 Purpose Reconnaissance Level Characterization
 RWP # 00-707-1204
 Date 2-3-00 Time 1500

RCT _____
 Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Biased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F - Pipe	0	-24	23	16	F - Fan F-115-A+B	3	64	37
2	F - AF-4 Filter	0	-32	23	17	F - Unit 5-A	3	8	19
3	F - Air Return	0	40	5	18	F - Unit	0	-28	14
4	F - Door Plenum ¹⁰⁵	0	-4	23	19	F - Door FU-18	0	24	14
5	F - Door Plen	0	52	72	20	F - Pipes	0	0	46
6	F - Door	0	-16	23	21	F - Drain	0	-12	5
7	F - Door	6	-24	9	22	F - Pipe	0	-12	9
8	F - Door	0	-16	19	23	F - Pump	0	0	5
9	F - Pump (39)	3	0	16.75	24	F - Pump	0	-32	23
10	F - HP pump P-11	0	-28	19	25	F - Tanks	0	0	19
11	F - HP pump P-10B+C	3	-16	23	26	F - Pipe	3	68	9
12	F - Uorder P-10A	3	-24	28	27	F - Tank	0	-52	5
13	F - Surge tank (43) DB3	0	0	34.766	28	F - Fan F-9A	0	56	19
14	F - Pump (44)	27	0	45.74	29	F - Fan F-9-B	3	-20	5
15	F - Fan F-8A+B	0	-28	42	30	F - Door FU-19	0	-32	19

Date Reviewed 2-17-00 RS Supervision: _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	F- Tank	0	-16	37	61				
32	F- Drain	0	28	19	62				
33	F- Tank	0	-12	23	63				
34	F- DU-17B	3	64	5	64				
35	F- Drain	0	24	9	65				
36	end of Survey				66				
37					67				
38					68				
39					69				
40					70				
41					71				
42					72				
43					73				
44					74				
45					75				
46					76				
47					77				
48					78				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

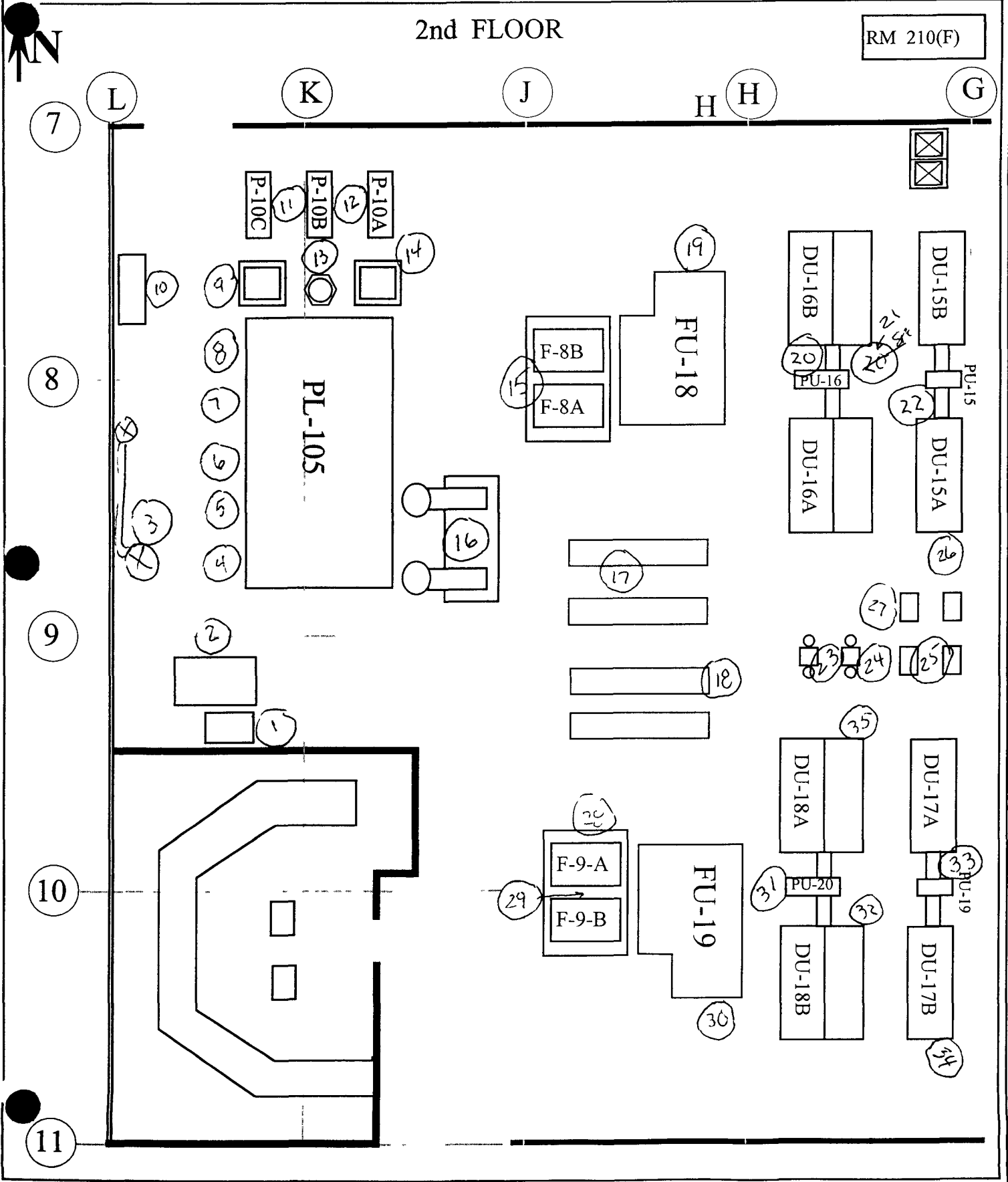
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SURVEY

Drawing Showing Survey Points

2nd FLOOR

RM 210(F)



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

COPY

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NE</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1518</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.3 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.26%</u>
MDA <u>13.9 dpm</u>	MDA <u>11.5 dpm</u>	MDA <u>12.4 dpm</u>
Mfg _____	Mfg _____	Mfg _____
Model _____	Model <u>NA</u>	Model _____
Serial # _____	Serial # <u>A</u>	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: Contamination/Radiation

Building 707Location Room 210 (F)Purpose Job CoverageRWP # 00 707 1204Date 2-2-00 Time 1500

RCT

Print name NA

Signature _____

Emp # _____

PRN/REN # _____

NA

Comments _____

pu - during - postareas contained with tape + plasticNo β contam found - see Peter Sany's

ALPHA

SURVEY RESULTS

GAMMA/NEUTRON

mrem/HR @ 30 cm

ID #		DPM/ 100cm ² (SWIPE)	DPM/ 100cm ² (DIRECT)	DPM (WIPE)
<u>39</u>	<u>1</u>	<u>3</u>	<u>16,675</u>	
<u>43</u>	<u>2</u>	<u>1083</u>	<u>34,766</u>	
<u>44</u>	<u>3</u>	<u>27</u>	<u>4,574</u>	
<u>boundary</u>	<u>4</u>	<u>3</u>	<u>23</u>	
<u>ventilator</u>	<u>5</u>	<u>6</u>	<u>46</u>	
<u>outside</u>	<u>6</u>	<u>0</u>	<u>9</u>	
<u>contam</u>	<u>7</u>	<u>12</u>	<u>5</u>	
<u>area</u>	<u>8</u>	<u>0</u>	<u>5</u>	
<u>contam area</u>	<u>9</u>	<u>0</u>	<u>59</u>	
<u>after</u>	<u>10</u>	<u>3</u>	<u>41</u>	
<u>containing</u>	<u>11</u>	<u>9</u>	<u>5</u>	
	<u>12</u>			
	<u>13</u>			
	<u>14</u>			
	<u>15</u>			

GAMMA NEUTRON TOTAL

1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____
9	_____	_____	_____
10	_____	_____	_____
11	_____	_____	_____
12	_____	_____	_____
13	_____	_____	_____
14	_____	_____	_____
15	_____	_____	_____

Date Reviewed 2-3-00 RS Supervision _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA****Survey Type Contamination**

Building 707
 Location Room 210 (F)
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204
 Date 2-10-00 Time 1600

RCT _____
 Print name / Signature / Emp #

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.3 cpm</u>	Bkg <u>0.4 cpm</u>	Bkg <u>40 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.63%</u>
MDA <u>13.9 dpm</u>	MDA <u>14.8 dpm</u>	MDA <u>58.2 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>833</u>	Serial # <u>872</u>	Serial # <u></u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>N/A</u>
Bkg <u>45 cpm</u>	Bkg <u>48 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>103.4 dpm</u>	MDA <u>106.5 dpm</u>	MDA <u></u>

Comments Ceiling / Walls > 2 meters Biased survey points
1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	W>2	0	-40	0	16	C	3	0	0
2	W>2	0	-24	0	17	C	3	-12	15
3	W>2	0	24	-5	18	C	0	0	10
4	W>2	0	0	-15	19	C	0	-20	-5
5	W>2	3	0	0	20	C	0	-12	0
6	W>2	0	40	0	21	C	3	4	0
7	W>2	0	-20	-5	22	C	0	20	0
8	W>2	0	-4	-5	23	C	9	-36	0
9	W>2	0	-20	-5	24	C	0	16	-10
10	W>2	0	32	-10	25	C	0	44	-15
11	W>2	0	28	-19	26	C	0	20	34
12	W>2	0	12	-15	27	C	0	8	0
13	C	0	-56	-5	28	C	0	84	0
14	C	3	8	10	29	C	0	12	-10
15	C	0	-36	15	30	C	0	-40	-19

Date Reviewed. 2-17-00 RS Supervision: _____

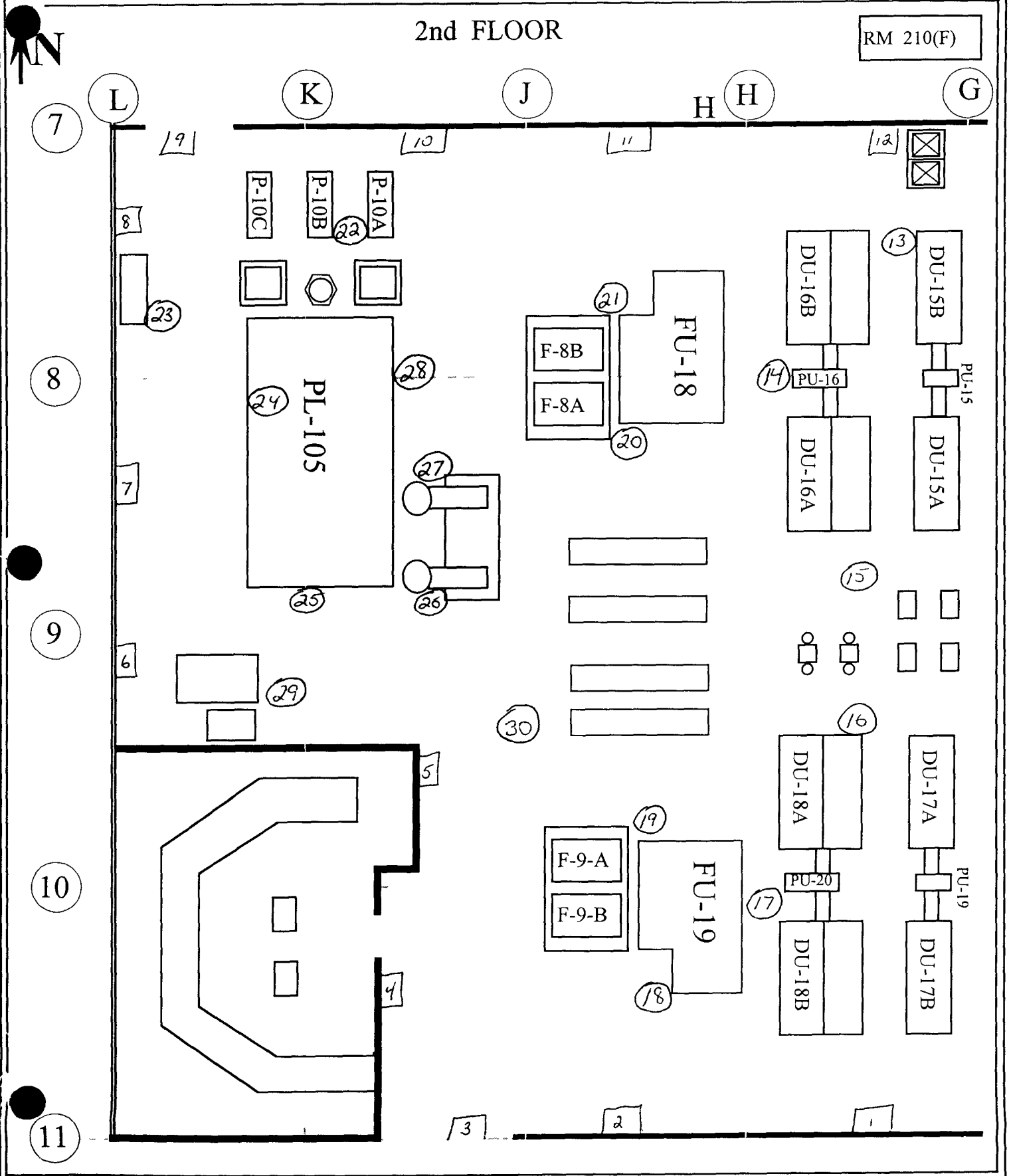
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGIC (U.S. (F))

Drawing Showing Survey Points

2nd FLOOR

RM 210(F)

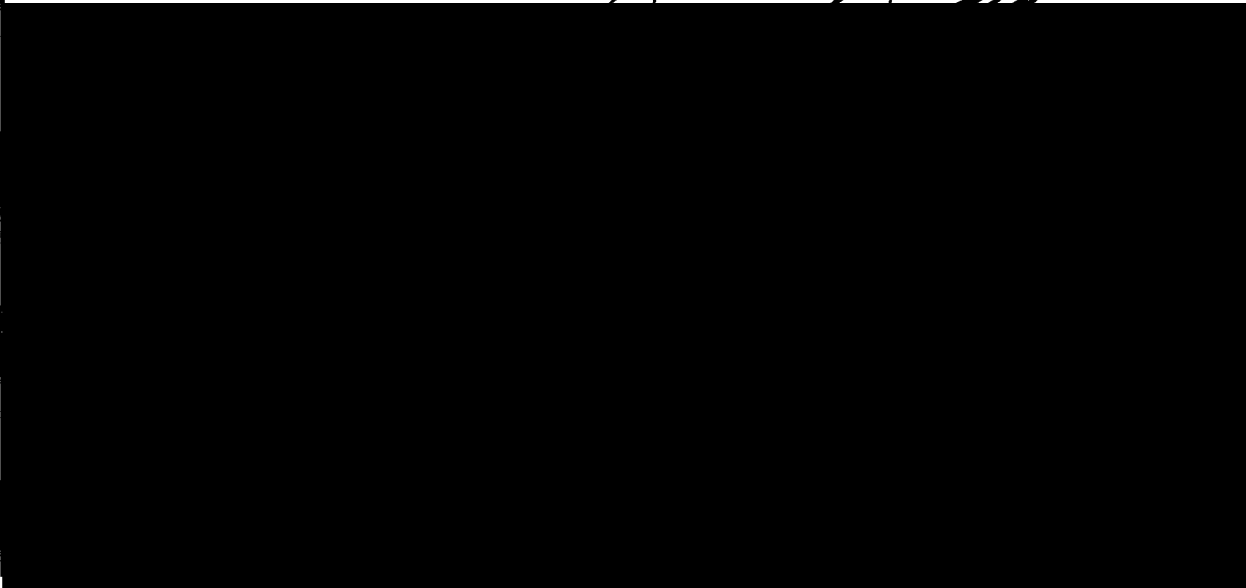


[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area G		Survey Unit N/A		Area (m ²) 640	
Survey Unit Description North East corner of room 220, 2 nd floor of Building 707 Area is North of Column D-14 and East of Column G-13 Building 707 radiological areas are posted as fixed contamination areas					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	55	45	0	0	55
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707
Survey Area: G	Survey Unit: N/A
Survey Unit Description: NORTH EAST CORNER OF ROOM 220, 2 ND FLOOR OF BUILDING 707 AREA IS NORTH OF COLUMN D-14 AND EAST OF COLUMN G-13 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads Special security requirements for access to 2 nd floor	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation: 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707
Survey Area: G		Survey Unit: N/A
Survey Unit Description: North East corner of room 220, 2 nd floor of Building 707 Area is North of Column D-14 and East of Column G-13 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	FLOORS/WALLS < 2 meters	SEE NOTE 1
	30 <u>unbiased</u> survey points uniformly distributed throughout the area	SEE NOTE 2
	25 <u>biased</u> survey points at the following locations	SEE NOTE 3
	<ul style="list-style-type: none"> - Points around floors adjacent to internally contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, cathene system, etc - Point near each airlock to the plenums - Near waste drum storage - Rooms 221, 222, 223, and maintenance cage area <i>Change #5</i> - Stained/discolored areas - Other areas of potential concern based on RCT judgement/experience 	SEE NOTE 4
	CEILINGS/WALLS > 2 meters	
	30 <u>biased</u> surveys (divided evenly between wall and ceiling when possible) with focus on following areas	
	<ul style="list-style-type: none"> - Walls behind process lines - Tops/sides of plenums - Stained or discolored areas - Areas around pipe or other penetrations 	
	EQUIPMENT	
	45 <u>biased</u> survey points on equipment with one or more samples from	
	<ul style="list-style-type: none"> - Equipment which has visible leaks or contained spills beneath them - Survey points at exhaust ducts - 5 survey points on top of overhead piping (where locations are accessible) - Fixed equipment in maintenance cage <i>Change #5</i> - Other areas of potential concern based on RCT judgement/experience 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707
Survey Area: G		Survey Unit N/A
Survey Unit Description: North East corner of room 220, 2 nd floor of Building 707 Area is North of Column D-14 and East of Column G-13 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 55 1 m ² surface scans shall be taken at each location identified for non-scan surface activity measurements Locations found above the DCGL shall be documented CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NONE (2 nd Floor of 707 does not have painted floors)	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Page Superseded *01/18/00 Change #2*
SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building: 707
Survey Area: G	Survey Unit: N/A
Survey Unit Description: North East corner of room 220, 2 nd floor of Building 707 Area is North of Column D-14 and East of Column G-13 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: G	Survey Unit N/A
Survey Unit Description: North East corner of room 220, 2 nd floor of Building 707 Area is North of Column D-14 and East of Column G-13 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none">- Direct alpha contamination- Removable alpha contamination- Removable beta contamination- 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

Page superseded 01/18/00 *Change #3*
SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: G	Survey Unit N/A
Survey Unit Description: North East corner of room 220, 2 nd floor of Building 707 Area is North of Column D-14 and East of Column G-13 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: G	Survey Unit N/A
Survey Unit Description: North East corner of room 220, 2 nd floor of Building 707 Area is North of Column D-14 and East of Column G-13 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assure that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Building 707	
Survey Area: G	Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>		
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	1	EDM
Total Activity Surveys	1	EDM
Exposure Rate Surveys	N/A	N/A
Removable Surveys	1	EDM
Media Samples	N/A	N/A
Volumetric Samples	N/A	N/A
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	1	EDM
Total Activity Surveys	1	EDM
Exposure Rate Surveys	N/A	N/A
Removable Surveys	1	EDM
Media Samples	N/A	N/A
Volumetric Samples	N/A	N/A
Comments		
All survey pts identified on maps.		
Rooms 221, 222, 223 ARE NOT IN THIS SURVEY AREA AND WERE ACCIDENTALLY listed IN THIS AREA.		

REMOVABLE AND ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____
Model _____	Model _____	Model _____	Building. _____
Serial # _____	Serial # _____	Serial # _____	Location* _____
Cal Due _____	Cal Due _____	Cal Due _____	Purpose _____
Bkg _____	Bkg _____	Bkg _____	RWP # _____
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____
Mfg. _____	Mfg. _____	Mfg. _____	Print name _____ Signature _____ Emp # _____
Model _____	Model _____	Model _____	RCT _____ / _____ / _____
Serial # _____	Serial # _____	Serial # _____	Print name _____ Signature _____ Emp # _____
Cal Due _____	Cal Due _____	Cal Due _____	
Bkg _____	Bkg _____	Bkg _____	
Efficiency _____	Efficiency _____	Efficiency _____	
MDA _____	MDA _____	MDA _____	

PRL #: _____

Comments _____

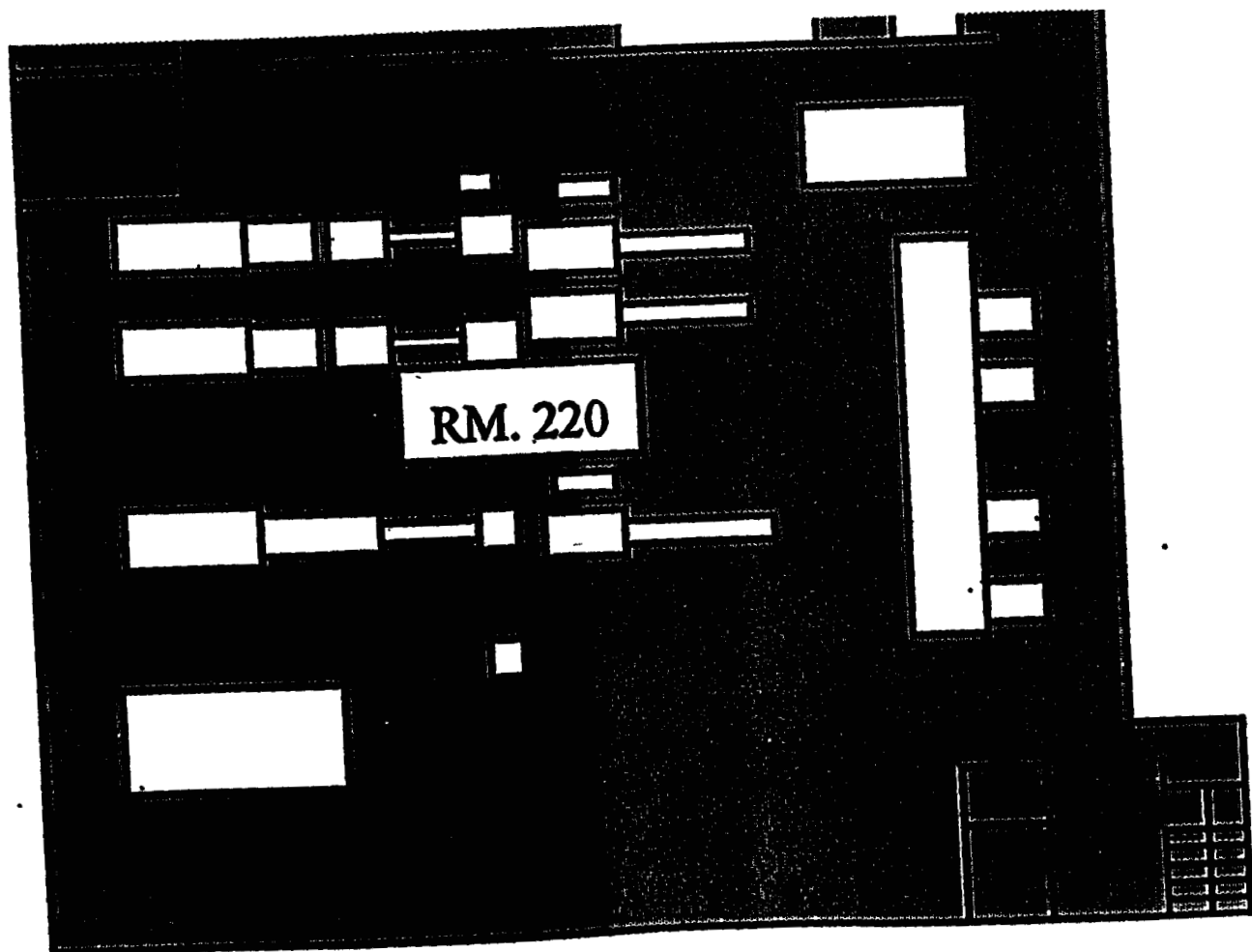
SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1 _____	_____	_____	_____	26 _____	_____	_____	_____
2 _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33 _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

Date Reviewed: _____ RS Supervision: _____ / _____ / _____

Print Name _____ Signature _____ Emp # _____

RADIOLOGICAL SAFETY
Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3265</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.3 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.01%</u>
MDA <u>13.9 dpm</u>	MDA <u>17.9 dpm</u>	MDA <u>414.2 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>BC-833</u>	Serial # <u>BC-872</u>	Serial # <u>N</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>N</u>
Bkg <u>43 cpm</u>	Bkg <u>47 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>101.3 dpm</u>	MDA <u>105.5 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location Room 220 (G)
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 2-8-00 Time 1330

RCT

Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Unbiased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F	0	-16	19	16	F	3	-12	-5
2	F	0	-48	5	17	F	3	-4	0
3	<2 G11 → F11	0	-40	10	18	F	3	-20	10
4	F	0	0	15	19	F	0	4	-10
5	<2 E11 → D11	0	-8	10	20	F	3	40	0
6	F	0	-8	0	21	F	0	-8	0
7	F	0	-8	5	22	F	0	-16	10
8	<2 D11 → C11	6	-16	-5	23	F	3	4	10
9	<2 C11 → C12	0	-20	-5	24	F	0	-8	-5
10	F	0	52	0	25	F	3	0	15
11	<2 C12 → C13	0	0	-5	26	F	0	-24	0
12	F	0	40	10	27	F	0	20	24
13	F	0	-36	-10	28	F	0	-40	10
14	<2 C13 → C14	0	40	0	29	F	0	0	38
15	F	3	16	-5	30	F	0	44	0

Date Reviewed: 2 17 00 RS Supervision:

Print Name

Signature

Emp #

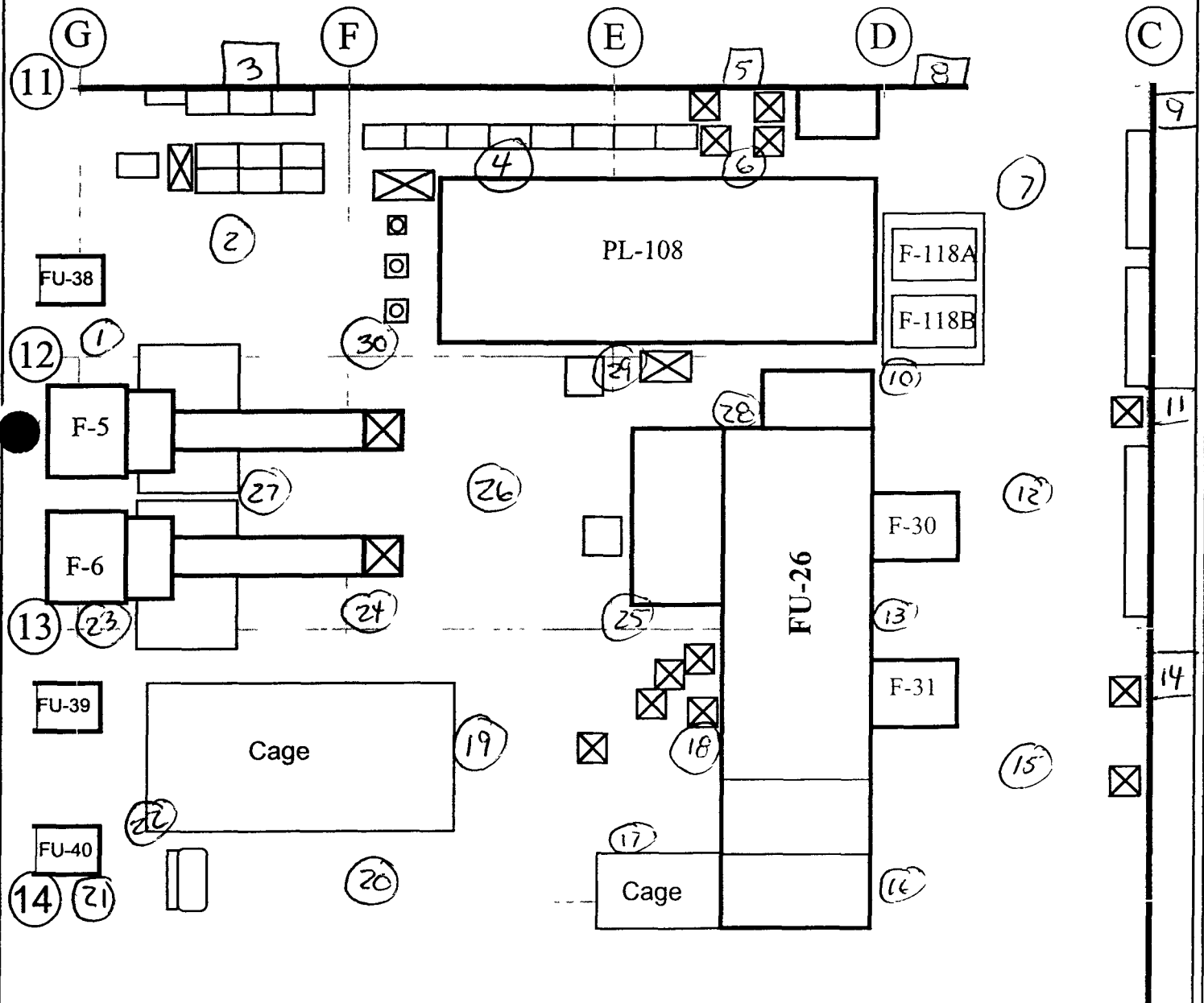
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

RM 220(G)

N ↑



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1518</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.3 cpm</u>	Bkg <u>0.4 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.86%</u>
MDA <u>13.9 dpm</u>	MDA <u>14.8 dpm</u>	MDA <u>42.5 dpm</u>

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>833</u>	Serial # <u>872</u>	Serial # <u></u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u></u>
Bkg <u>43 cpm</u>	Bkg <u>48 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>106.3 dpm</u>	MDA <u>106.5 dpm</u>	MDA <u></u>

Survey Type Contamination
 Building 707
 Location Room 220 (G)
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 2-9-00 Time 1500

RCT _____
 Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Biased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F	3	-16	19	16	F	0	48	9
2	F	0	+16	0	17	F	0	12	19
3	F	0	-4	23	18	F	0	-24	28
4	F	0	12	0	19	F	0	52	37
5	F	6	-4	5	20	F	0	-12	23
6	F	0	+20	23	21	F	0	36	14
7	F	0	-24	14	22	F	3	72	14
8	F	0	0	5	23	F	0	-12	14
9	F	0	-8	19	24	F	0	8	5
10	F	0	-28	32	25	F	0	-12	19
11	F	0	28	14	26	end of Survey			
12	F	0	-12	9	27				
13	F	3	32	9	28				
14	F	0	-16	19	29				
15	F	0	-12	9	30				

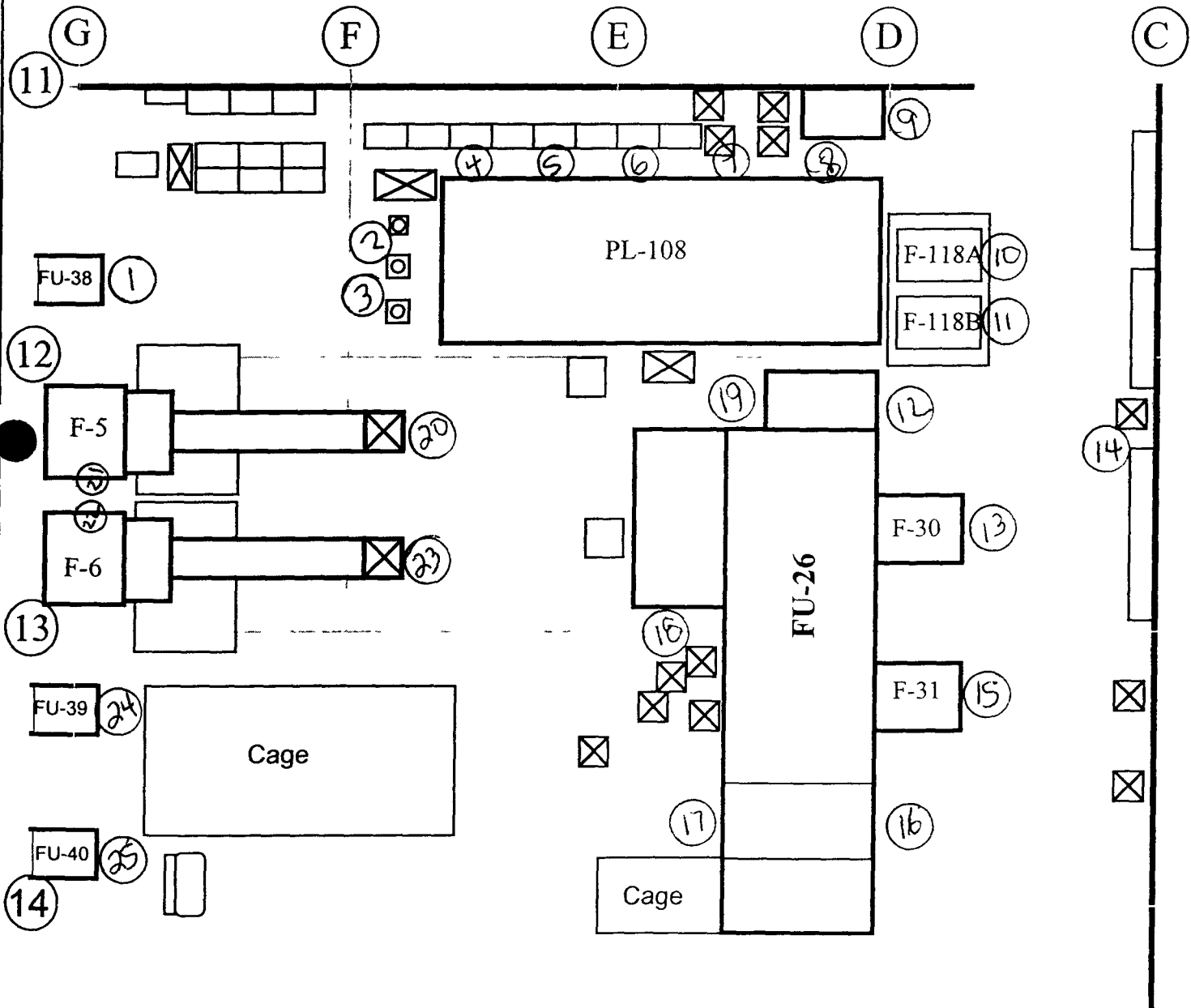
Date Reviewed 2-17-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

RM 220(G)

N ↑



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # 837	Serial # 1233
Cal Due 4-10-00	Cal Due 5-17-00	Cal Due 5-11-00
Bkg 0.0 cpm	Bkg 0.1 cpm	Bkg 2.0 cpm
Efficiency 33%	Efficiency 33%	Efficiency 20.63%
MDA 8.2 dpm	MDA 11.5 dpm	MDA 45.0 dpm

Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model BC-4	Model
Serial # 833	Serial # 872	Serial #
Cal Due 7-14-00	Cal Due 4-12-00	Cal Due
Bkg 44 cpm	Bkg 46 cpm	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA 102.4 dpm	MDA 104.5 dpm	MDA

Survey Type Contamination
 Building 707
 Location Room 220 (G)
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 2-14-00 Time 1620RCT R. Stueckrath

Print name

Signature

RCT S. Clouch

Print name

Signature

/ Emp #

Comments Ceiling / Walls > 2 meters Biased survey points1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	C	0	20	29	16	C	0	4	19
2	C	0	32	29	17	C	6	28	10
3	C	3	40	29	18	C	0	12	24
4	C	0	4	24	19	C	0	28	29
5	C	0	12	15	20	C	0	56	29
6	C	0	8	10	21	C	0	8	29
7	C	3	40	10	22	C	0	0	15
8	C	0	8	5	23	> 2	6	40	5
9	C	0	4	10	24	> 2	6	28	10
10	C	0	0	19	25	> 2	0	40	15
11	C	0	4	24	26	> 2	0	24	10
12	C	0	32	29	27	> 2	0	12	19
13	C	0	4	10	28	> 2	0	16	19
14	C	0	40	29	29	> 2	0	56	10
15	C	0	36	34	30	> 2	0	48	24

Date Reviewed 2-17-00 RS Supervision:

Print Name

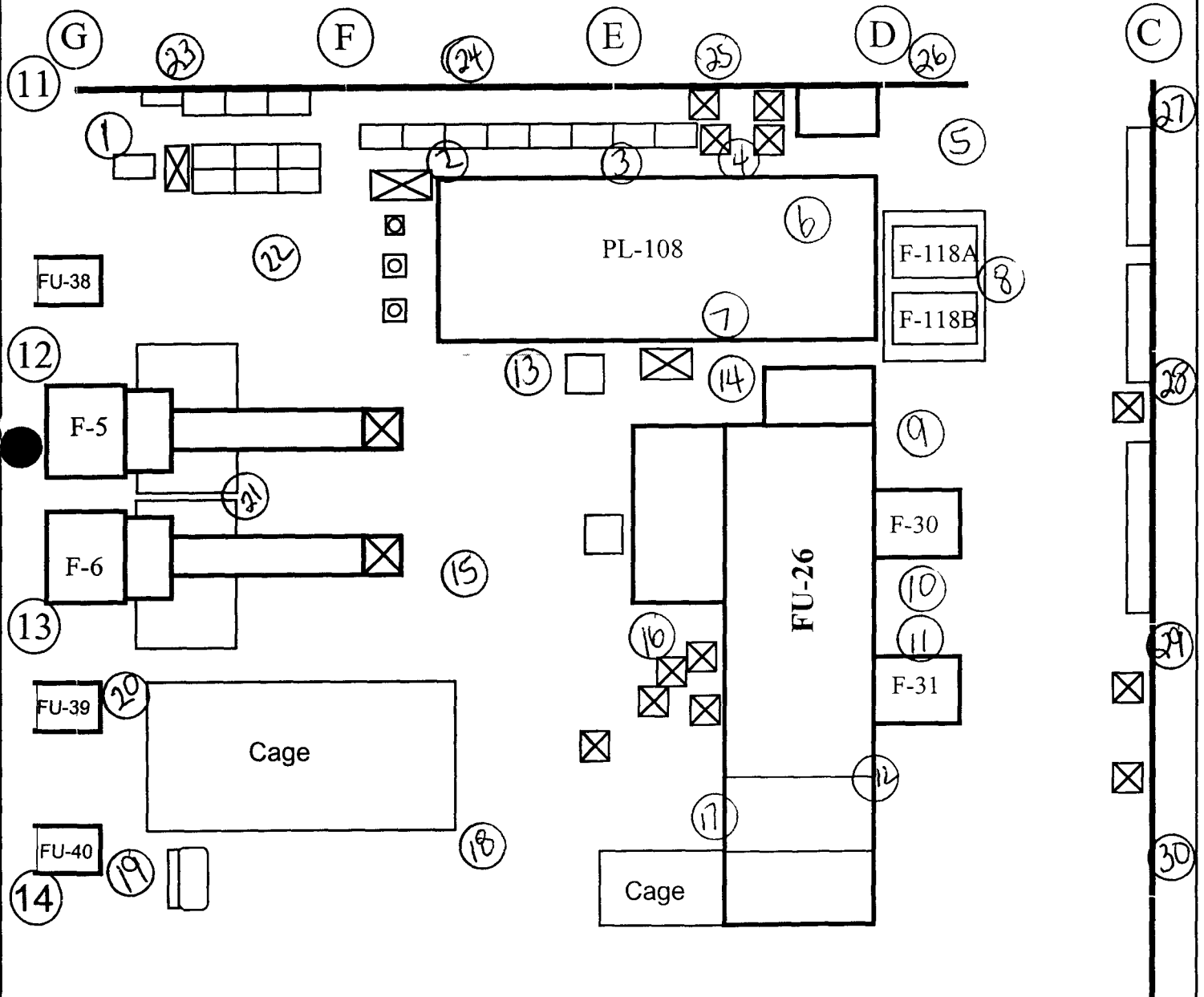
Signature

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SURVEY

Drawing Showing Survey Points

RM 220(G)

N
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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1518</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.0 cpm</u>	Bkg <u>210 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.86</u>
MDA <u>12.9 dpm</u>	MDA <u>8.2 dpm</u>	MDA <u>42.5 dpm</u>

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NETech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>ELECTRA</u>
Serial # <u>833</u>	Serial # <u>872</u>	Serial # <u>1233</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u> </u>
Bkg <u>42 cpm</u>	Bkg <u>46 cpm</u>	Bkg <u> </u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>20.63</u>
MDA <u>100.3 dpm</u>	MDA <u>104.5 dpm</u>	MDA <u> </u>

Survey Type Contamination

Building 707

Location Room 220 (G)

Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 2-16-00 Time 1030

RCT _____

Print name / Signature / Emp #

Comments Equipment Biased survey points1 minute pats and swipes See map for locations31-45 > 2 metersNo Fixed Equipment in Maintenance Cage

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Door PL-108	3	12	19	16	FU-40	0	28	14
2	Door PL-108	0	12	23	17	FU-39	0	12	14
3	Door PL-108	0	-12	23	18	Duct	0	0	19
4	Door PL-108	0	8	14	19	Duct	0	-32	46
5	Door PL-108	0	-16	28	20	Door	0	8	23
6	FAN F-118 A	0	-20	28	21	Door	3	-16	23
7	FAN F-118 B	3	-8	9	22	Duct	6	-20	19
8	Door PL-108 Top PL-108 FU-26 2-16-00	0	-28	5	23	FU-38	0	0	23
9	FAN F-30 Elect Panel 30 2-16-00	0	0	5	24	Top PL-108	3	-36	10
10	Door FU-26	0	20	5	25	Top PL-108	6	24	5
11	FAN F-30	0	-8	14	26	Top PL-108	0	-28	5
12	FAN F-31	0	-36	19	27	Top FU-26	3	0	39
13	Door	0	-48	9	28	Top FU-26	3	8	15
14	Door	0	-28	14	29	Top FU-26	3	-8	10
15	Door	0	24	9	30	Top FU-26	6	0	14

Date Reviewed 2-17-00 RS Supervision _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SURVEY****Drawing Showing Survey Points**

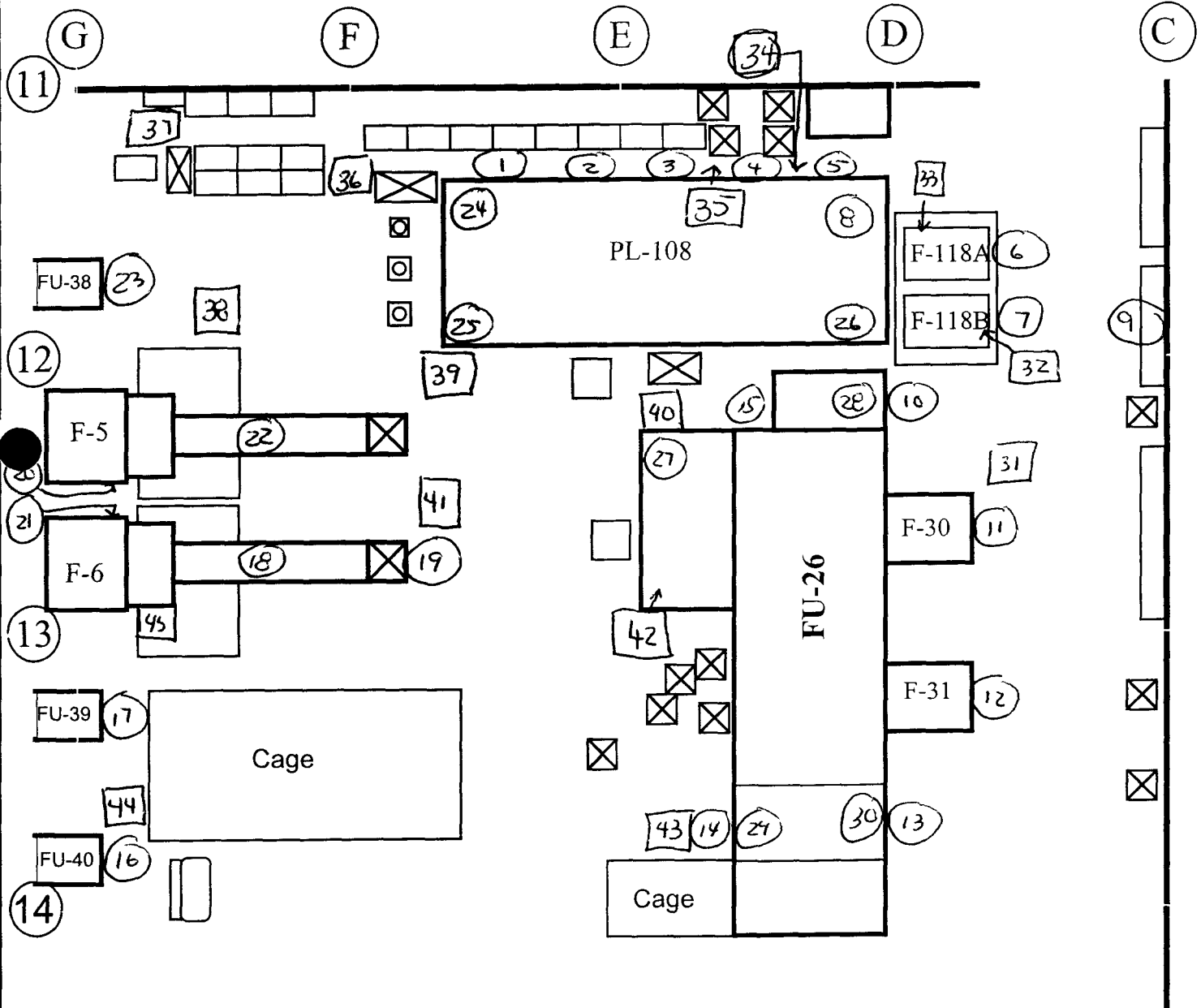
Pipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	Duct	0	-12	19	61				
32	Top F-118 B	3	4	19	62				
33	Top F-118 A	3	4	29	63				
34	Duct	0	-12	19	64				
35	Duct	0	16	24	65				
36	Duct	0	0	5	66				
37	Duct	0	-8	24	67				
38	Duct	0	4	15	68				
39	Duct	3	12	5	69				
40	Duct	6	28	15	70				
41	Duct	3	32	15	71				
42	Top Fu-26	0	16	15	72				
43	Duct	9	-16	39	73				
44	Duct	9	20	24	74				
45	Duct	6	48	0	75				
46	END of Survey				76				
47					77				
48					75				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL

Drawing Showing Survey Points

RM 220(G)

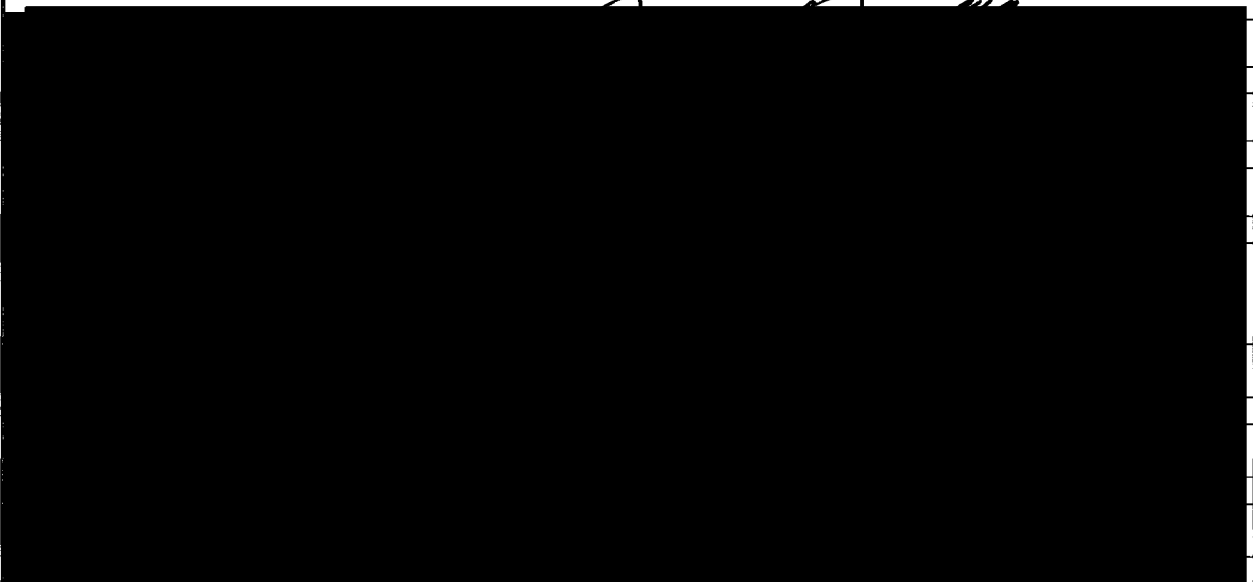
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[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area H		Survey Unit N/A		Area (m ²) 640	
Survey Unit Description North West corner of room 220, 2 nd floor of Building 707 Area is North of Column K-14 and West of Column G-13 Building 707 radiological areas are posted as fixed contamination areas					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	55	45	0	0	55
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707
Survey Area: H	Survey Unit: N/A
Survey Unit Description: NORTH WEST CORNER OF ROOM 220, 2 ND FLOOR OF BUILDING 707 AREA IS NORTH OF COLUMN K-14 AND WEST OF COLUMN G-13 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input checked="" type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads Special security requirements for access to 2 nd floor	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation: 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707
Survey Area: H		Survey Unit N/A
Survey Unit Description: North West corner of room 220, 2 nd floor of Building 707 Area is North of Column K-14 and West of Column G-13 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>30 unbiased survey points uniformly distributed throughout the area</p> <p>25 biased survey points at the following locations</p> <ul style="list-style-type: none"> - Points around floors adjacent to internally contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, cathene system, etc - Point near each airlock to the plenums - Near waste drum storage - Rooms 221, 222, 223, and maintenance cage area - Stained/discolored areas - Other areas of potential concern based on RCT judgement/experience <p>CEILINGS/WALLS > 2 meters</p> <p>30 biased surveys (divided evenly between wall and ceiling when possible) with focus on following areas</p> <ul style="list-style-type: none"> - Walls behind process lines - Tops/sides of plenums - Stained or discolored areas - Areas around pipe or other penetrations <p>EQUIPMENT</p> <p>45 biased survey points on equipment with one or more samples from</p> <ul style="list-style-type: none"> - Equipment which has visible leaks or contained spills beneath them - Survey points at exhaust ducts - 5 survey points on top of overhead piping (where locations are accessible) - Fixed equipment in maintenance cage - Other areas of potential concern based on RCT judgement/experience 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID 99-0002		Building 707
Survey Area H		Survey Unit N/A
Survey Unit Description: North West corner of room 220, 2 nd floor of Building 707 Area is North of Column K-14 and West of Column G-13 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 55 1 m ² surface scans shall be taken at each location identified for surface activity measurements Locations found above the DCGL shall be documented CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NONE (2 nd Floor of 707 does not have painted floors)	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Page superseded 01/18/00 *Change #2*
SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: H	Survey Unit N/A
Survey Unit Description: North West corner of room 220, 2 nd floor of Building 707 Area is North of Column K-14 and West of Column G-13 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: H	Survey Unit N/A
Survey Unit Description: North West corner of room 220, 2 nd floor of Building 707 Area is North of Column K-14 and West of Column G-13 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none">- Direct alpha contamination- Removable alpha contamination- Removable beta contamination- 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

Page superseded 01/18/00 JH Change #3
SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: H	Survey Unit N/A
Survey Unit Description: North West corner of room 220, 2 nd floor of Building 707 Area is North of Column K-14 and West of Column G-13 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: H	Survey Unit N/A
Survey Unit Description: North West corner of room 220, 2 nd floor of Building 707 Area is North of Column K-14 and West of Column G-13 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assure that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Building 707	
Survey Area. H	Survey Unit N/A	
Survey Type. Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>		
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	1	db
Total Activity Surveys	1	db
Exposure Rate Surveys	N/A	N/A
Removable Surveys	1	db
Media Samples	N/A	N/A
Volumetric Samples	N/A	N/A
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	1	db
Total Activity Surveys	1	db
Exposure Rate Surveys	N/A	N/A
Removable Surveys	1	db
Media Samples	N/A	N/A
Volumetric Samples	N/A	N/A
Comments All survey pts identified on maps.		

INSTRUMENT DATA

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____

Building _____

Location* _____

Purpose _____

RWP # _____

Date _____ Time _____

RCT _____ / _____ / _____

Print name _____ Signature _____ Emp # _____

RCT _____ / _____ / _____

Print name _____ Signature _____ Emp # _____

PRL #: _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1 _____	_____	_____	_____	26 _____	_____	_____	_____
2 _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33 _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

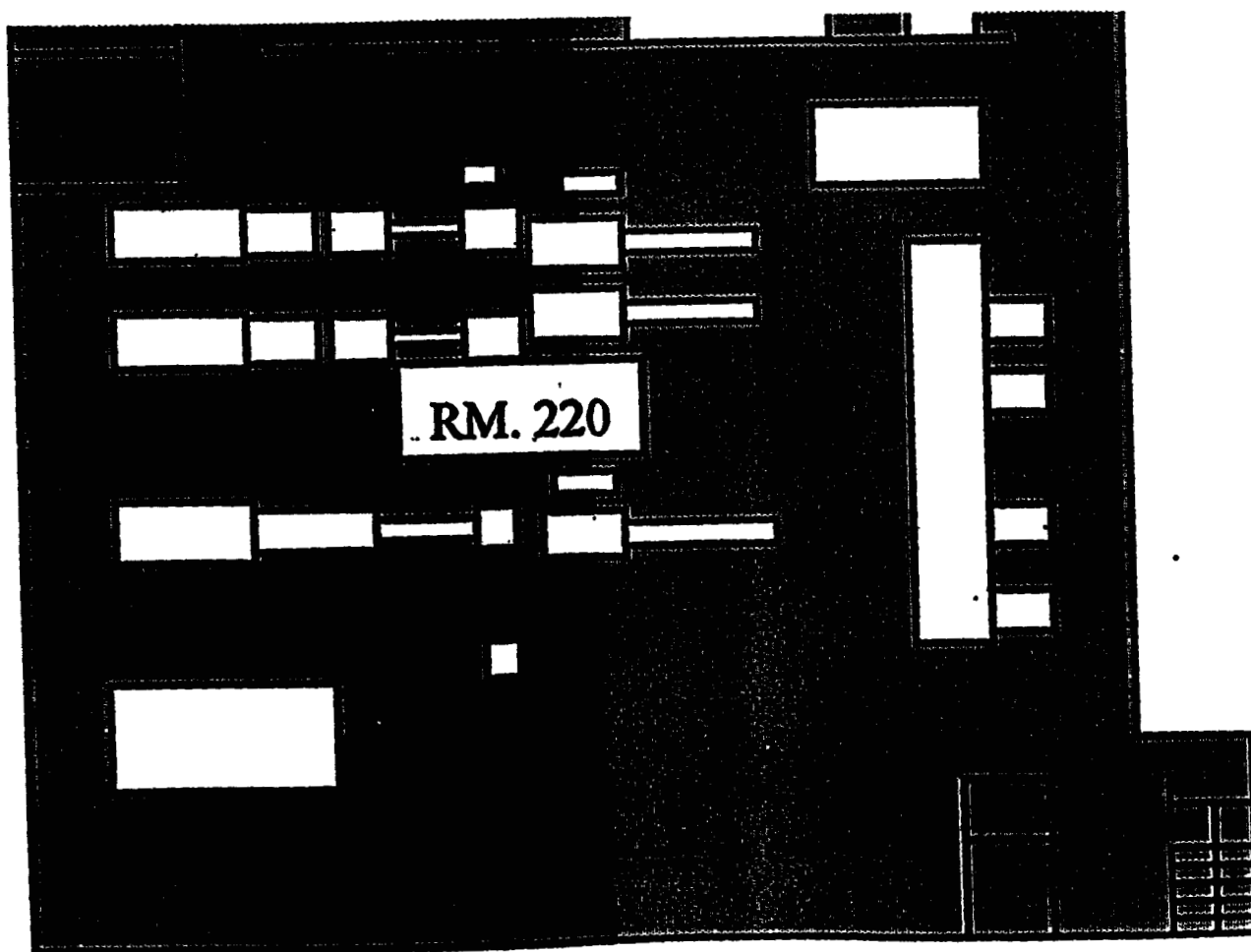
Date Reviewed: _____ RS Supervision: _____ / _____ / _____

Print Name _____ Signature _____ Emp # _____

191/466

171

RADIOLOGICAL SAFETY
Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1518</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.3 cpm</u>	Bkg <u>0.4 cpm</u>	Bkg <u>30 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>2186%</u>
MDA <u>139 dpm</u>	MDA <u>148 dpm</u>	MDA <u>493 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>833</u>	Serial # <u>872</u>	Serial # <u></u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>N/A</u>
Bkg <u>43 cpm</u>	Bkg <u>48 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>1013 dpm</u>	MDA <u>1065 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location Room 220 (H)
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 2-9-00 Time 1100

RCT N/A
 Print name N/A Signature / Emp #

Comments Floor / Walls < 2 meters Unbiased survey points1 m² scans, 1 minute pats and swipes See map for locationsRm 222 lock, full of Equipment (Not accessible)**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F	0	24	-10	16	F	0	-4	18
2	F	0	32	10	17	F	0	20	14
3	F	0	52	-14	18	F	3	36	14
4	F	0	-12	5	19	F	0	-16	0
5	F	3	8	23	20	F	0	0	27
6	F	0	12	-10	21	F	0	-24	23
7	F	0	8	-5	22	F	3	8	9
8	F	0	24	23	23	F	3	-8	37
9	F	0	32	14	24	F	3	8	9
10	F	0	-12	23	25	W<2	6	28	0
11	F	0	20	10	26	W<2	0	-64	-14
12	F	0	-24	0	27	W<2	0	48	-14
13	F	3	-8	14	28	W<2	0	4	?
14	F	0	56	23	29	W<2	0	20	-9
15	F	0	0	18	30	W<2	0	-32	-19

2-21-00 RS Supervision:

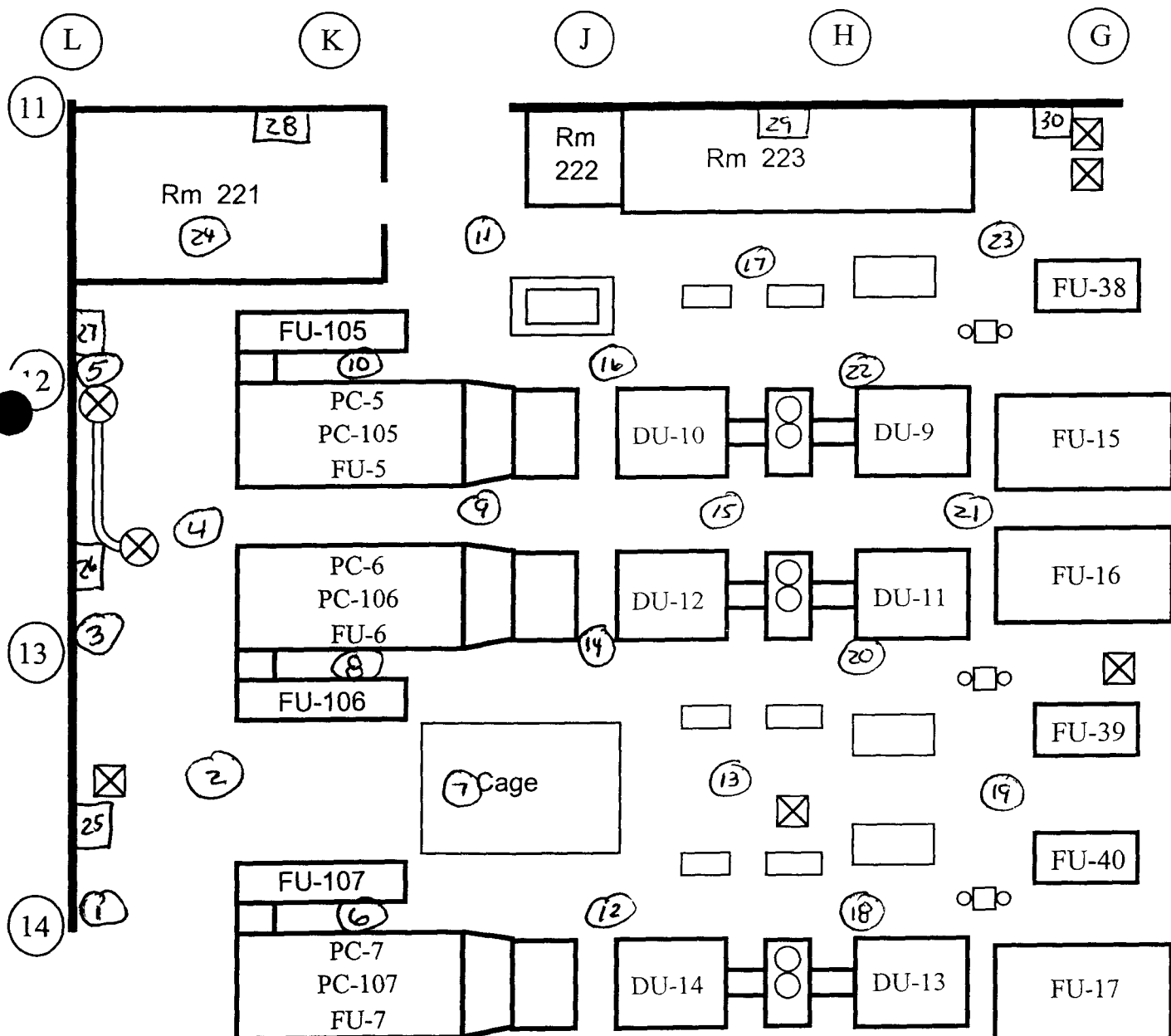
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGIC

Drawing Showing Survey Points

RM 220(H)

N ↑



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1389</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>03 cpm</u>	Bkg <u>04 cpm</u>	Bkg <u>20 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20 77%</u>
MDA <u>139 dpm</u>	MDA <u>148 dpm</u>	MDA <u>447 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>833</u>	Serial # <u>872</u>	Serial # <u></u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>N/A</u>
Bkg <u>43 cpm</u>	Bkg <u>48 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>1013 dpm</u>	MDA <u>1065 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location Room 220 (H)
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 2 9 00 Time 1600

RCT N/A
 Print name N/A Signature / Emp #

Comments Floor / Walls < 2 meters Biased survey points1 m² scans, 1 minute pats and swipes See map for locationsNo areas in Rms 221, 222, 223, and maintenance cage that needed biased survey due to process knowledge (per RCT judgement/experience)**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F	0	40	0	16	F	0	-24	14
2	F	0	-24	10	17	F	0	32	0
3	F	0	4	10	18	F	0	-60	-10
4	F	0	8	0	19	F	0	-36	14
5	F	3	-8	14	20	F	3	-20	-10
6	F	0	32	10	21	F	0	24	5
7	F	0	0	0	22	F	3	4	5
8	F	0	-40	0	23	F	3	-4	0
9	F	0	0	5	24	F	0	28	-10
10	F	3	-16	-5	25	F	6	76	-10
11	F	3	36	10	26	END of Survey			
12	F	3	-16	10	27				
13	F	0	-8	-10	28				
14	F	3	8	-10	29				
15	F	0	28	5	30				

Date Reviewed: 2 21 00 RS Supervision

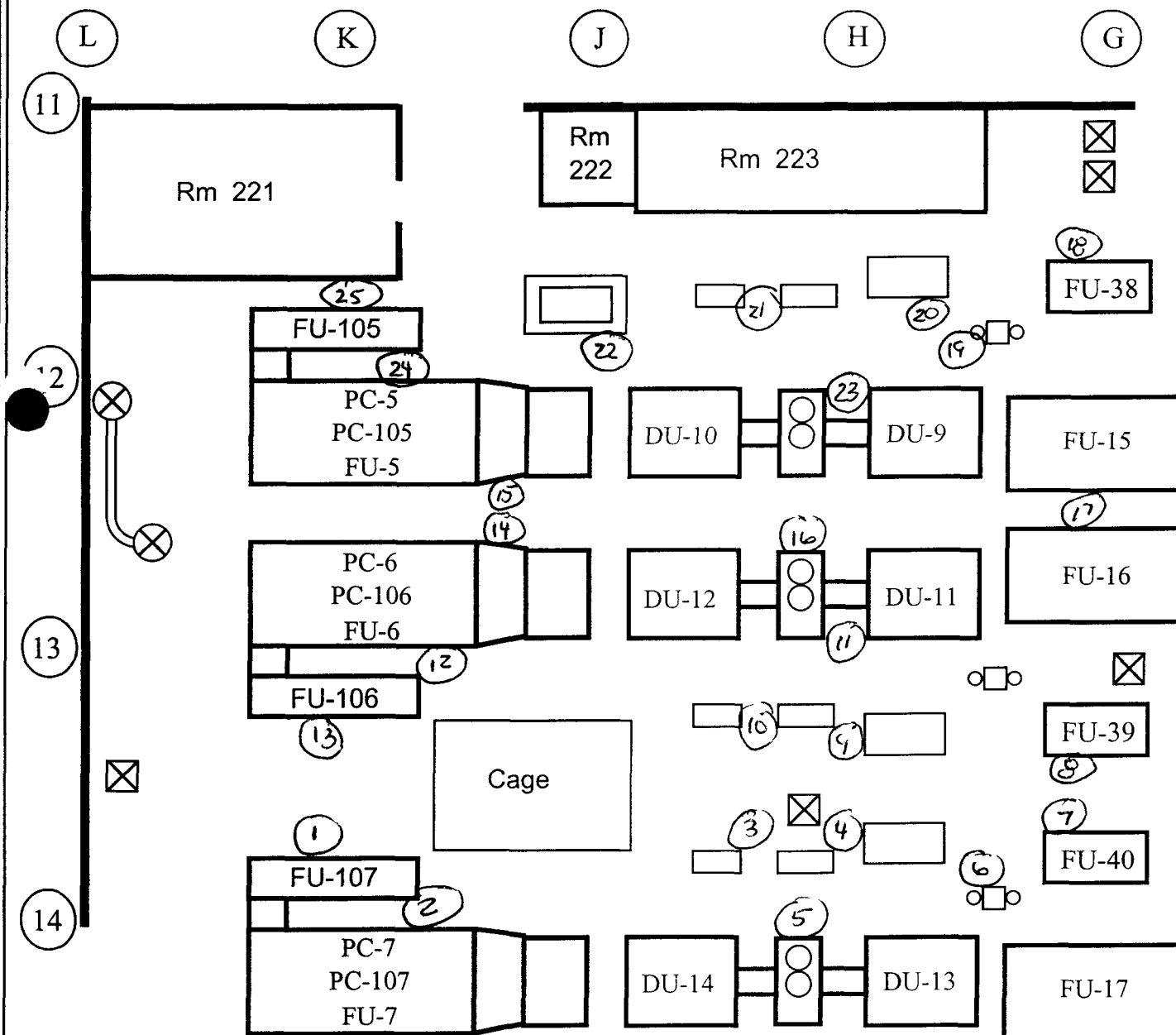
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGIC

Drawing Showing Survey Points

RM 220(H)

N



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1389</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.0 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.7%</u>
MDA <u>12.9 dpm</u>	MDA <u>8.2 dpm</u>	MDA <u>13.0 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>833</u>	Serial # <u>872</u>	Serial # <u>1233</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>1.2 cpm</u>	Bkg <u>1.6 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>20.6%</u>
MDA <u>100.3 dpm</u>	MDA <u>104.5 dpm</u>	MDA <u>13.1 dpm</u>

Survey Type Contamination

Building 707

Location Room 220 (H)

Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 2/6/00 Time 1600

RCT _____

Print name / Signature / Emp #

Comments Equipment Biased survey points

1 minute pats and swipes See map for locations

#31-45 < 72 using Electra #1233

No Fixed Equipment in maintenance cage

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1.	DUCT Pipe	3	12	5	16	FU-16	3	40	14
2	FU-105	0	-52	5	17	DU-11	0	4	10
3	FU-5	0	-56	34	18	PU-11	0	28	10
4	FU-6	0	-20	5	19	DU-12	0	40	19
5	FU-5 Door	0	-44	29	20	FU-106	3	0	29
6	FU-6 Door	3	-44	10	21	FU-107	0	-20	34
7	DU-10	0	-12	5	22	P-107	0	-12	5
8	PU-10	0	0	14	23	PU-15	3	-28	10
9	DU-9	0	-20	14	24	R-7	0	-16	0
10	J-11	0	8	14	25	FU-40	0	-28	0
11	P-105	0	4	10	26	FU-39	0	0	14
12	PU-9	0	-16	14	27	PU-6 CU-6	0	4	5
13	R-5	0	-16	14	28	PU R-6	0	56	19
14	FU-38	0	-20	5	29	PU-12	0	-16	34
15	FU-15	0	-18	14	30	P-106	3	-16	14

Date Reviewed 2/21/00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGIC SAFETY

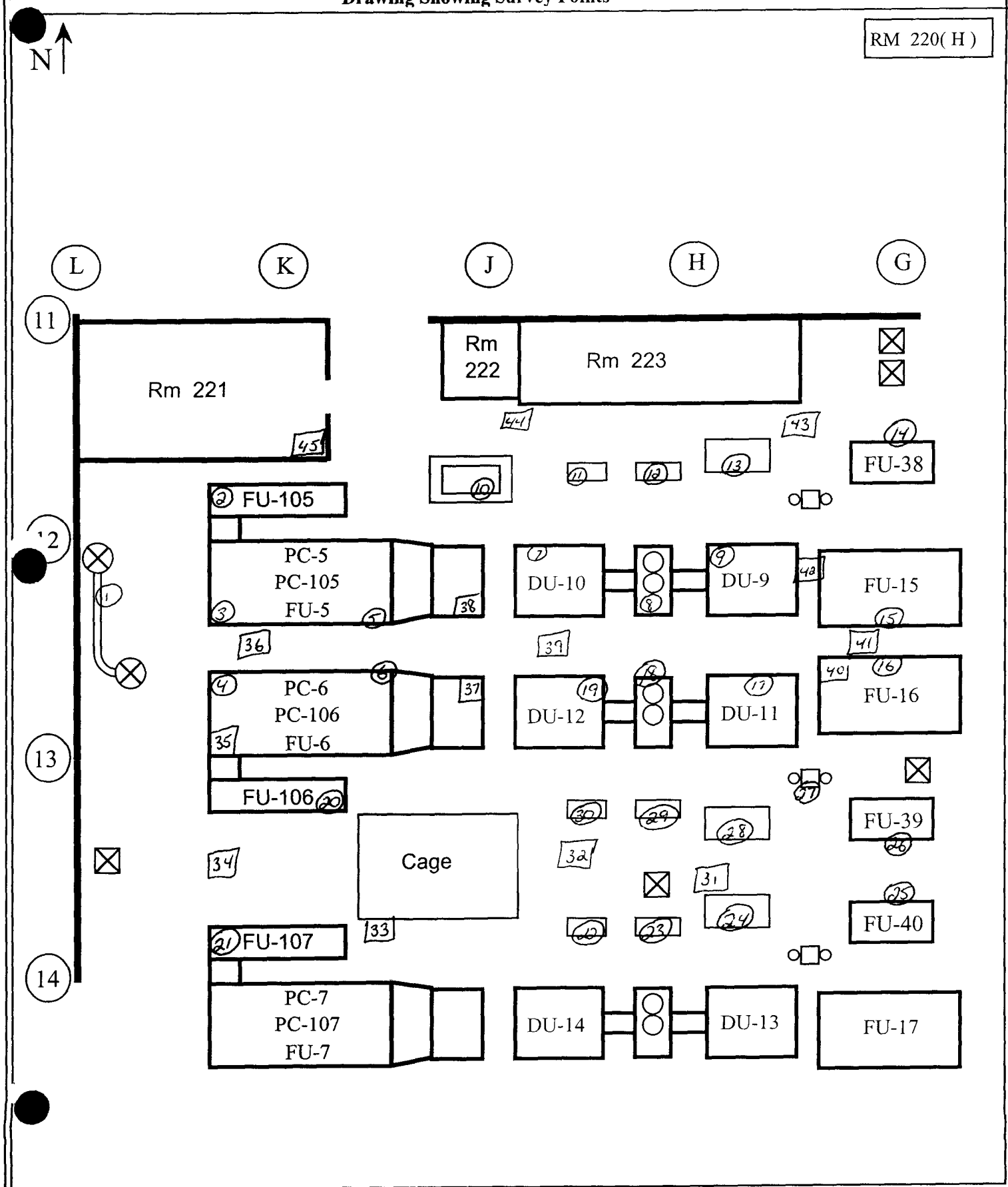
Drawing Showing Survey Points

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	E72 Duct	3	64	17	61				
32	E72 Duct	3	8	24	62				
33	E72 wires	0	-32	10	63				
34	E72 Duct	6	32	15	64				
35	E72 FU-6	6	-8	15	65				
36	E72 Duct	12	-24	24	66				
37	E72 Duct	9	32	15	67				
38	E72 Duct	9	48	15	68				
39	E72 Duct	0	28	19	69				
40	E72 FU16	18	-12	102	70				
41	E72 Duct	9	16	10	71				
42	E72 Duct	0	-4	5	72				
43	E72 Duct	12	-28	34	73				
44	E72 Duct	3	4	0	74				
45	E72 Duct	12	0	19	75				
46	End of Survey				76				
47					77				
48					75				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGIC

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.0 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.63%</u>
MDA <u>115 dpm</u>	MDA <u>8.2 dpm</u>	MDA <u>131 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>833</u>	Serial # <u>872</u>	Serial # <u></u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>✓/A</u>
Bkg <u>46 cpm</u>	Bkg <u>48 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>1045 dpm</u>	MDA <u>1065 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location Room 220 (H)
 Purpose Reconnaissance Level Characterization

RWP # 00 707-1204

Date 2-17-00 Time 1600

RCT

Print name / Signature / Emp #

Comments Ceiling / Walls > 2 meters Biased survey points
1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	<u>w > 2</u>	<u>0</u>	<u>-16</u>	<u>24</u>	16	<u>C</u>	<u>0</u>	<u>-24</u>	<u>19</u>
2	<u>w > 2</u>	<u>0</u>	<u>-36</u>	<u>10</u>	17	<u>C</u>	<u>0</u>	<u>-4</u>	<u>18</u>
3	<u>w > 2</u>	<u>0</u>	<u>20</u>	<u>0</u>	18	<u>C</u>	<u>3</u>	<u>32</u>	<u>10</u>
4	<u>w > 2</u>	<u>0</u>	<u>0</u>	<u>15</u>	19	<u>C</u>	<u>0</u>	<u>-20</u>	<u>10</u>
5	<u>w > 2</u>	<u>0</u>	<u>-16</u>	<u>34</u>	20	<u>C</u>	<u>0</u>	<u>-40</u>	<u>29</u>
6	<u>w > 2</u>	<u>0</u>	<u>12</u>	<u>19</u>	21	<u>C</u>	<u>6</u>	<u>36</u>	<u>5</u>
7	<u>w > 2</u>	<u>0</u>	<u>52</u>	<u>19</u>	22	<u>C</u>	<u>0</u>	<u>-40</u>	<u>5</u>
8	<u>C</u>	<u>0</u>	<u>-20</u>	<u>19</u>	23	<u>C</u>	<u>0</u>	<u>-4</u>	<u>15</u>
9	<u>C</u>	<u>0</u>	<u>-20</u>	<u>24</u>	24	<u>C</u>	<u>0</u>	<u>0</u>	<u>19</u>
10	<u>C</u>	<u>0</u>	<u>40</u>	<u>15</u>	25	<u>C</u>	<u>0</u>	<u>-4</u>	<u>29</u>
11	<u>C</u>	<u>3</u>	<u>12</u>	<u>5</u>	26	<u>C</u>	<u>0</u>	<u>8</u>	<u>24</u>
12	<u>C</u>	<u>0</u>	<u>24</u>	<u>15</u>	27	<u>C</u>	<u>0</u>	<u>-12</u>	<u>34</u>
13	<u>C</u>	<u>3</u>	<u>52</u>	<u>29</u>	28	<u>C</u>	<u>3</u>	<u>4</u>	<u>19</u>
14	<u>C</u>	<u>0</u>	<u>4</u>	<u>19</u>	29	<u>C</u>	<u>0</u>	<u>-60</u>	<u>5</u>
15	<u>C</u>	<u>0</u>	<u>0</u>	<u>19</u>	30	<u>C</u>	<u>0</u>	<u>-32</u>	<u>24</u>

Date Reviewed 2-21-00 RS Supervision:

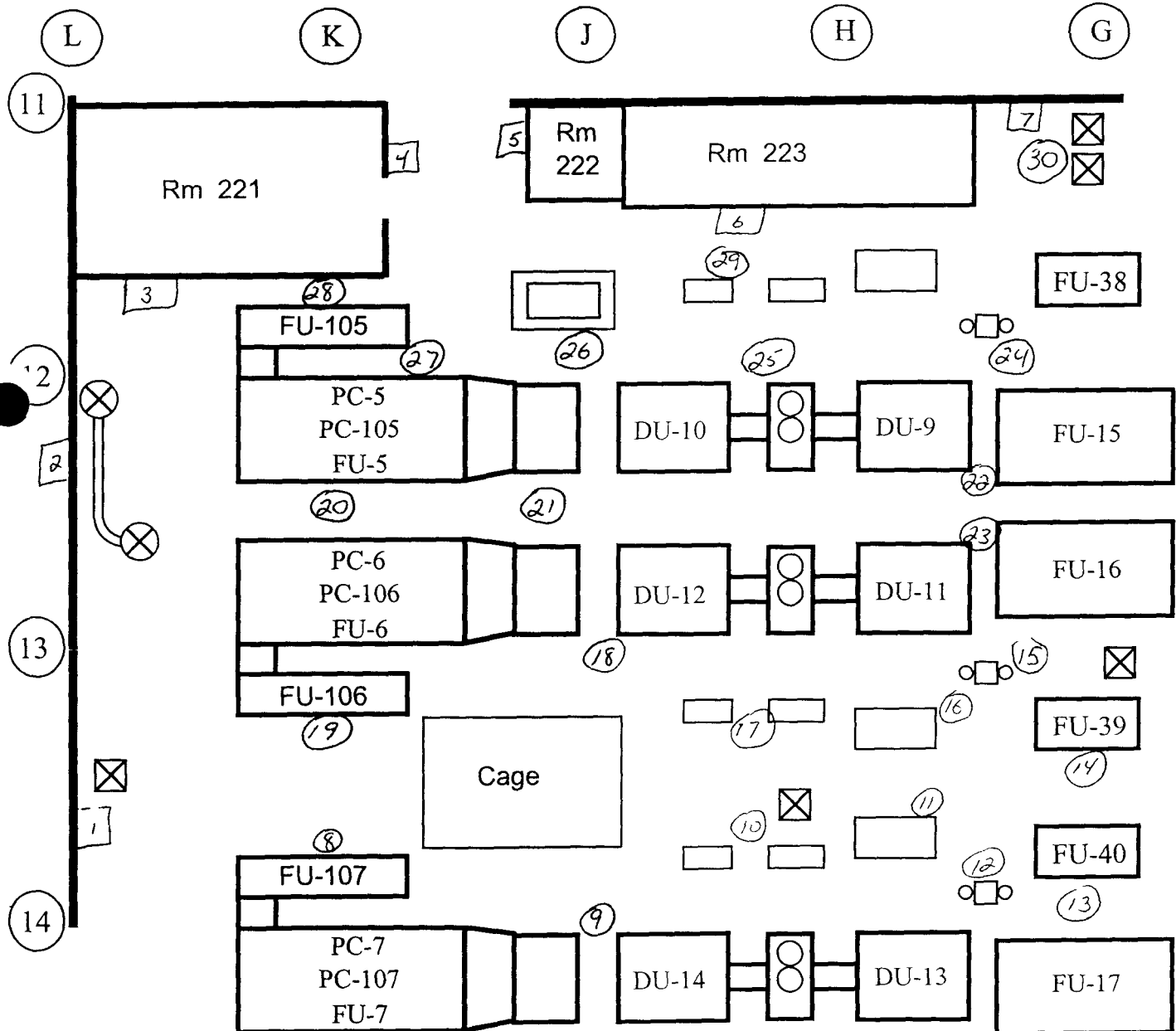
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGIC

Drawing Showing Survey Points

RM 220(H)

N ↑

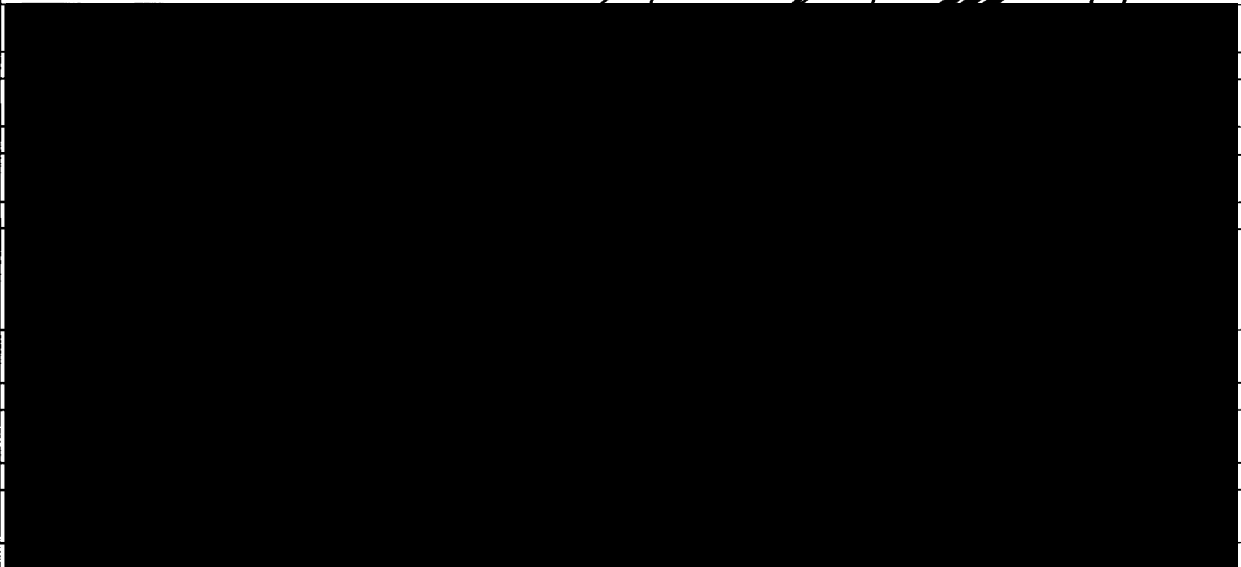


[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area I		Survey Unit N/A		Area (m ²) 640	
Survey Unit Description South East corner of room 220, 2 nd floor of Building 707 Area is South of Column D-14 and East of Column G-15 Building 707 radiological areas are posted as fixed contamination areas					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	55	45	0	0	55
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building 707
Survey Area: I	Survey Unit: N/A
Survey Unit Description: SOUTH EAST CORNER OF ROOM 220, 2 ND FLOOR OF BUILDING 707 AREA IS SOUTH OF COLUMN D-14 AND EAST OF COLUMN G-15 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input checked="" type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads Special security requirements for access to 2 nd floor	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation: 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707
Survey Area: I		Survey Unit N/A
Survey Unit Description: South East corner of room 220, 2 nd floor of Building 707 Area is South of Column D-14 and East of Column G-15 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	FLOORS/WALLS < 2 meters 30 unbiased survey points uniformly distributed throughout the area 25 biased survey points at the following locations <ul style="list-style-type: none"> - Points around floors adjacent to internally contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, cathene system, etc - Point near each airlock to the plenums - Near waste drum storage - Rooms 221, 222, 223, and maintenance cage area - Stained/discolored areas - Other areas of potential concern based on RCT judgement/experience CEILINGS/WALLS > 2 meters 30 biased surveys (divided evenly between wall and ceiling when possible) with focus on following areas <ul style="list-style-type: none"> - Walls behind process lines - Tops/sides of plenums - Stained or discolored areas - Areas around pipe or other penetrations EQUIPMENT 45 biased survey points on equipment with one or more samples from <ul style="list-style-type: none"> - Equipment which has visible leaks or contained spills beneath them - Survey points at exhaust ducts - 5 survey points on top of overhead piping (where locations are accessible) - Fixed equipment in maintenance cage - Other areas of potential concern based on RCT judgement/experience 	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4 <i>yj 3/22/00 Chg #5</i>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707
Survey Area: I		Survey Unit N/A
Survey Unit Description: South East corner of room 220, 2 nd floor of Building 707 Area is South of Column D-14 and East of Column G-15 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 55 1 m ² surface scans shall be taken at each location identified for surface activity measurements Locations found above the DCGL shall be documented CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NONE (2 nd Floor of 707 does not have painted floors)	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Page superseded 01/18/00 *Y* Change #2
SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area. I	Survey Unit N/A
Survey Unit Description: South East corner of room 220, 2 nd floor of Building 707 Area is South of Column D-14 and East of Column G-15 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none">- Direct alpha contamination- Direct beta contamination- Removable alpha contamination- Removable beta contamination- 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID 99-0002	Building 707
Survey Area I	Survey Unit N/A
Survey Unit Description. South East corner of room 220, 2 nd floor of Building 707 Area is South of Column D-14 and East of Column G-15 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none">- Direct alpha contamination- Removable alpha contamination- Removable beta contamination- 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2: The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4. Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

Page superseded 01/18/00 JH Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)







Package ID: 99-0002	Building 707
Survey Area: I	Survey Unit N/A
Survey Unit Description: South East corner of room 220, 2 nd floor of Building 707 Area is South of Column D-14 and East of Column G-15 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building: 707
Survey Area: I	Survey Unit: N/A
Survey Unit Description South East corner of room 220, 2 nd floor of Building 707 Area is South of Column D-14 and East of Column G-15 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS:	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Building 707	
Survey Area: I	Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>		
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	1	
Total Activity Surveys	1	
Exposure Rate Surveys	N/A	N/A
Removable Surveys	1	
Media Samples	N/A	N/A
Volumetric Samples	N/A	N/A
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	1	
Total Activity Surveys	1	
Exposure Rate Surveys	N/A	N/A
Removable Surveys	1	
Media Samples	N/A	N/A
Volumetric Samples	N/A	N/A
Comments		
All survey points identified on survey maps.		

NUCLEAR AND ENVIRONMENTAL TECHNOLOGY SURVEY

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____
Model _____	Model _____	Model _____	Building _____
Serial # _____	Serial # _____	Serial # _____	Location: _____
Cal Due _____	Cal Due _____	Cal Due _____	Purpose _____
Bkg. _____	Bkg _____	Bkg _____	RWP # _____
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____
Mfg _____	Mfg _____	Mfg _____	Print name _____ Signature _____ Emp # _____
Model _____	Model _____	Model _____	RCT _____ / _____ / _____
Serial # _____	Serial # _____	Serial # _____	Print name _____ Signature _____ Emp # _____
Cal Due _____	Cal Due _____	Cal Due _____	
Bkg _____	Bkg _____	Bkg _____	
Efficiency _____	Efficiency _____	Efficiency _____	
MDA _____	MDA _____	MDA _____	

PRL #: _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1 _____	_____	_____	_____	26 _____	_____	_____	_____
2 _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33 _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

Date Reviewed: _____

RS Supervision: _____

Print Name _____

Signature _____

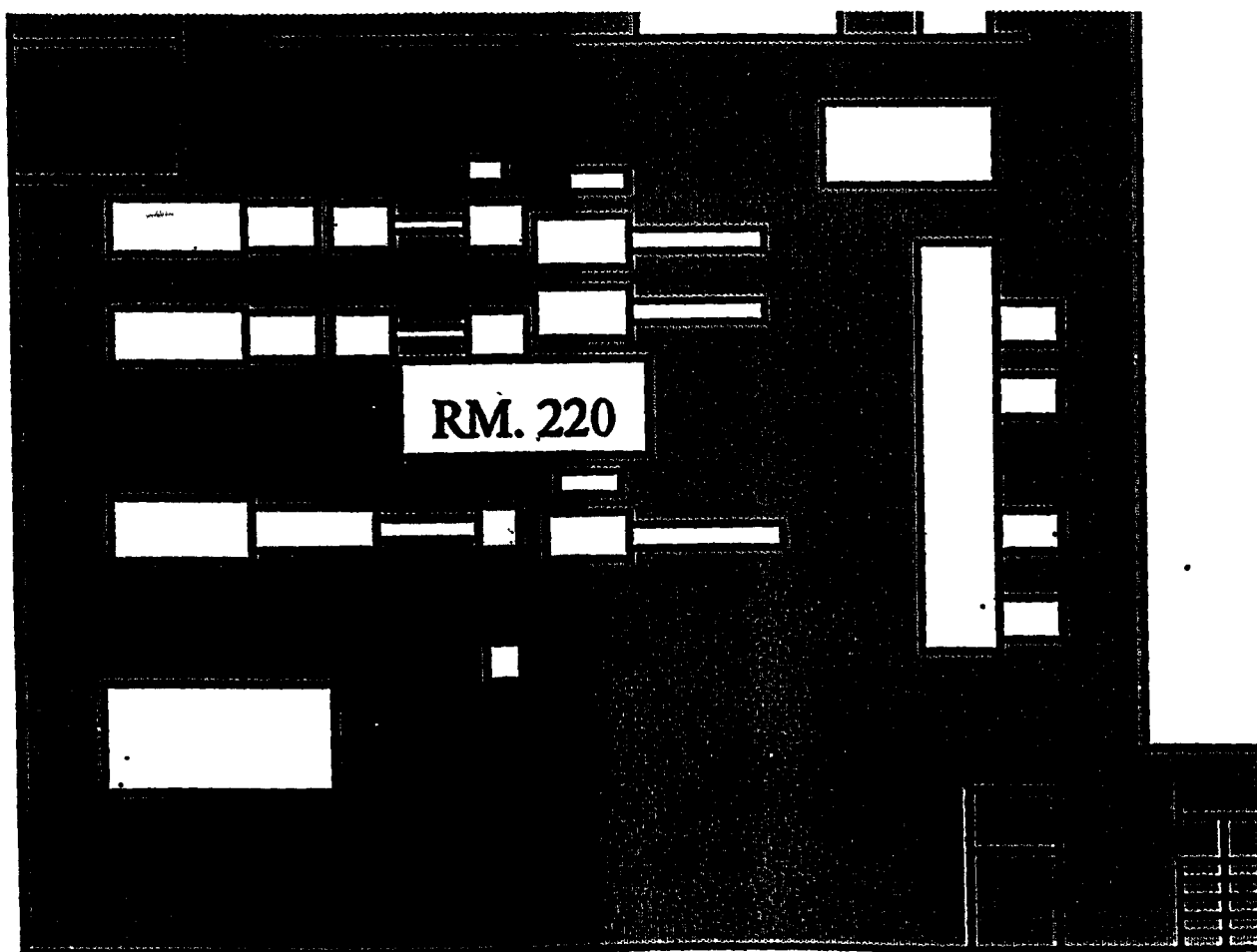
Emp # _____

193

200/466

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>349</u>	Serial # <u>837</u>	Serial # <u>3265</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.3 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.01%</u>
MDA <u>13.9 dpm</u>	MDA <u>12.9 dpm</u>	MDA <u>44.2 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>BC-833</u>	Serial # <u>BC-872</u>	Serial # <u>N/A</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u></u>
Bkg <u>4.3 cpm</u>	Bkg <u>4.7 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>101.3 dpm</u>	MDA <u>105.5 dpm</u>	MDA <u></u>

Survey Type Contamination
 Building 707
 Location Room 220 (I)
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 2-8-00 Time 1600

RCT

Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Unbiased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F	0	16	0	16	F	6	48	10
2	F	3	-20	-10	17	<2 C15 → C16	0	-20	-5
3	F	0	-8	0	18	F	6	28	5
4	F	0	-12	0	19	F	3	24	5
5	F	0	12	-5	20	F	0	12	0
6	F	3	-20	-5	21	F	0	16	-10
7	F	3	28	5	22	F	0	-68	10
8	F	3	-8	10	23	<2 D7 → E17	0	-12	-10
9	F	0	60	-5	24	F	0	24	10
10	F	0	-40	5	25	F	0	12	0
11	F	0	0	5	26	<2 E17 → F17	0	-40	10
12	F	3	-12	-10	27	F	0	8	-5
13	F	3	4	19	28	<2 F17 → G17	0	-8	24
14	<2 C14 → C15	0	12	5	29	F	3	4	10
15	F	0	8	0	30	F	0	-20	10

Date Reviewed 2-17-00 RS Supervisor

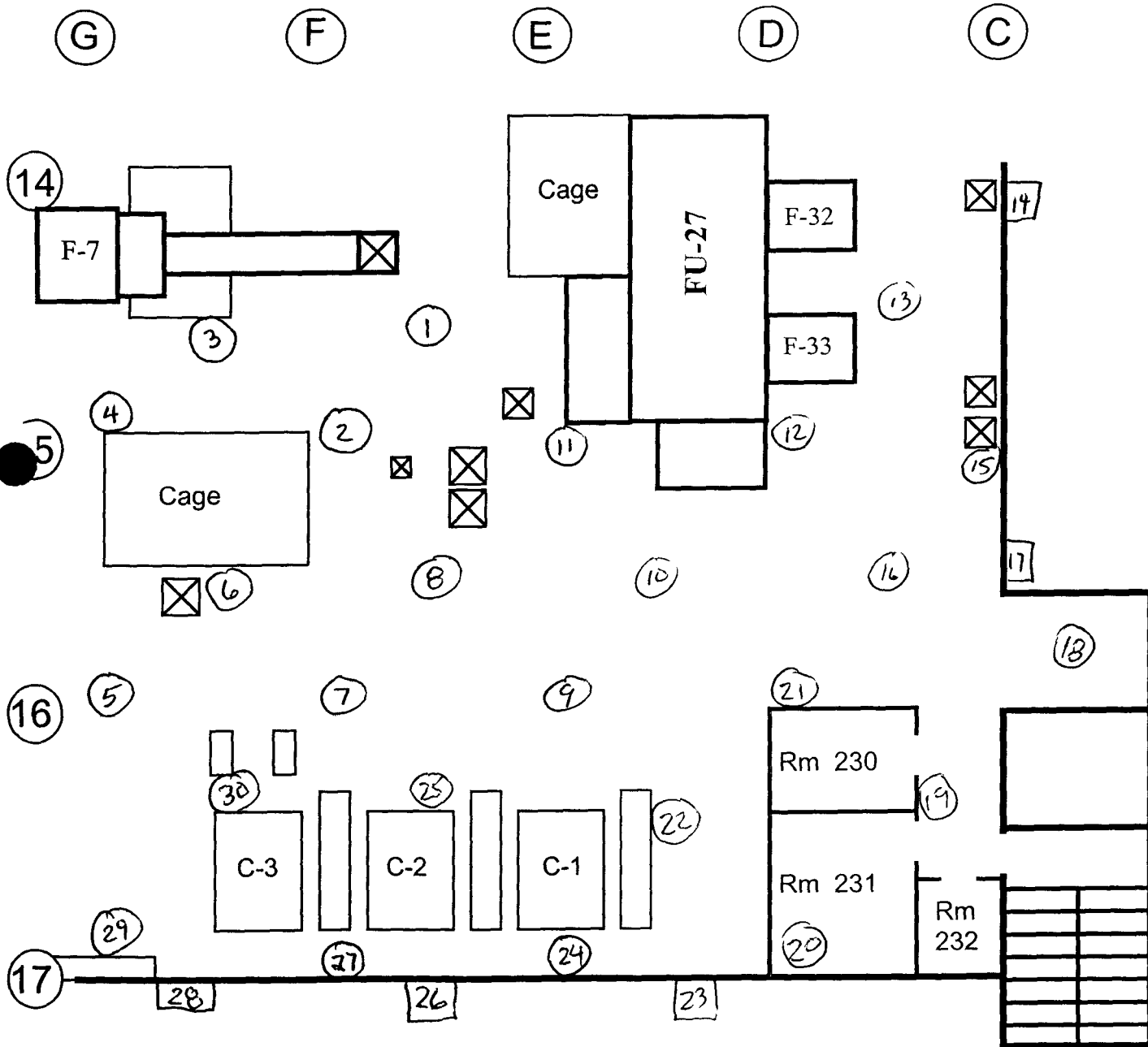
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

RM 220(I)

N ↑



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3265</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.3 cpm</u>	Bkg <u>0.4 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.01%</u>
MDA <u>13.9 dpm</u>	MDA <u>14.8 dpm</u>	MDA <u>35 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>BC-833</u>	Serial # <u>BC-872</u>	Serial # <u>N/A</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u></u>
Bkg <u>45 cpm</u>	Bkg <u>48 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>103.4 dpm</u>	MDA <u>106.5 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707

Location Room 220 (I)

Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 2-10-00 Time 1600

RCT

Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Biased survey points

1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F - Pipes	0	48	52	16	F - Pump	0	40	29
2	F - Motor	9	8	38	17	F - Airhead	0	-24	29
3	F - Duct	6	0	15	18	F - Pipes	0	-4	19
4	F - Duct	0	4	29	19	F - Door Fu-77	0	4	29
5	F - Door	0	-12	34	20	F - Door Fu-27	0	0	10
6	F - Duct	0	-4	38	21	F - Duct	0	48	15
7	F - Duct	3	28	19	22	F - Duct	0	-8	15
8	F - Duct	3	20	34	23	F - FAN F-33	6	-40	15
9	F - Duct	0	-8	15	24	F - FAN F-32	0	-8	24
10	F - Tanks	0	-16	19	25	F - Duct	9	20	29
11	F - Pump	0	8	19	26	end of Survey N A			
12	F - Pump	0	0	19	27				
13	F - Pump	0	44	19	28				
14	F - Pump	0	4	29	29				
15	F - Pump	3	28	19	30				

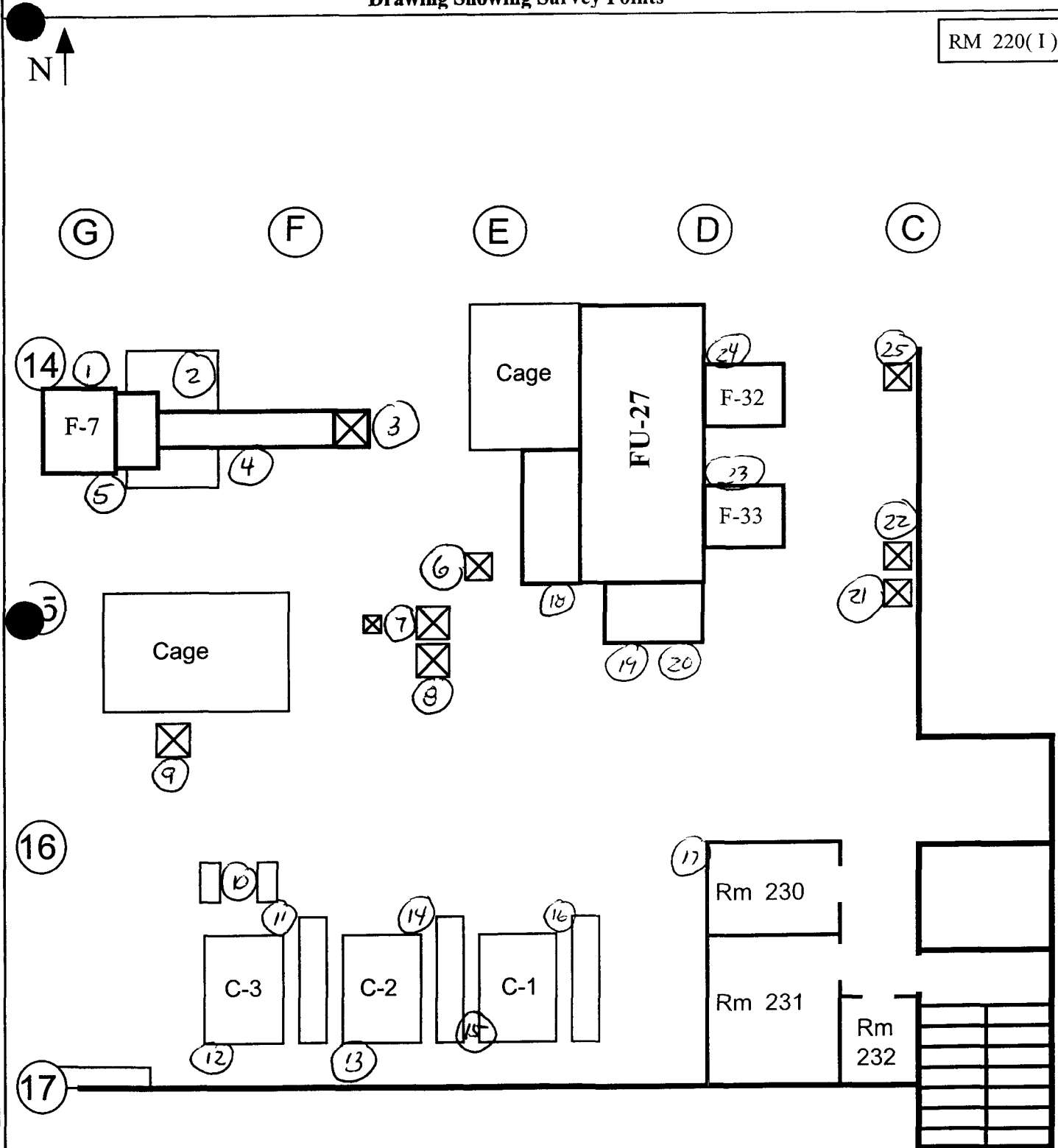
Date Reviewed 2-17-00 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

RM 220(I)



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3265</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.4 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.01%</u>
MDA <u>14.8 DPM</u>	MDA <u>11.5 DPM</u>	MDA <u>44.2 DPM</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>86-883</u>	Serial # <u>86-872</u>	Serial # <u>1233</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>4.1 cpm</u>	Bkg <u>4.8 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>20.63%</u>
MDA <u>99.2 DPM</u>	MDA <u>106.5 DPM</u>	MDA <u>35.7 DPM</u>

Survey Type Contamination
 Building 707
 Location Room 220 (I)
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 2-11-00 Time 1530

RCT _____
 Print name / Signature / Emp #

Comments Equipment Biased survey points
1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	motor	0	12	19	16	P-trap	0	28	62
2	Duct	0	32	19	17	Fan F-33	0	98	19
3	Duct Door	3	60	10	18	Fan F-32	3	40	19
4	Door	0	-4	85	19	Door	3	12	10
5	Tank	3	-8	19	20	Door	0	32	24
6	Tank	0	32	5	21	Top Fu-27	12	-4	24
7	Frame wok	0	84	10	22	Duct	3	0	19
8	Pump	0	8	15	23	Duct	12	76	5
9	Shielding	0	64	0	24	Duct	3	-12	10
10	Pump	6	64	5	25	Heating water pipe	9	68	5
11	Equip	0	40	19	26	Duct	0	40	19
12	Framework	0	-4	5	27	Crane	3	12	0
13	Equip	3	52	15	28	Duct	0	40	19
14	Shielding	0	56	15	29	Top Fu-27	0	-4	15
15	Equip	0	-4	15	30	Top Fu-27	3	60	10

Date Reviewed 2-17-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGIC

Drawing Showing Survey Points

Pipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	Sprinkler pipe	0	68	10	61				
32	Duct	3	16	15	62				
33	Top Fu-27	0	44	19	63				
34	Top Fu-27	0	-8	10	64				
35	Top Fu-27	0	20	0	65				
36	Elect J-Box	3	16	15	66				
37	Duct	3	-4	29	67				
38	Duct	0	28	19	68				
39	Elect Panel	3	20	5	69				
40	Crane	6	80	19	70				
41	Duct	0	20	19	71				
42	Top F-7	0	44	5	72				
43	Duct	0	-12	15	73				
44	Duct	0	-12	5	74				
45	Duct	0	4	10	75				
46	END OF SURVEY				76				
47					77				
48					75				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

N A

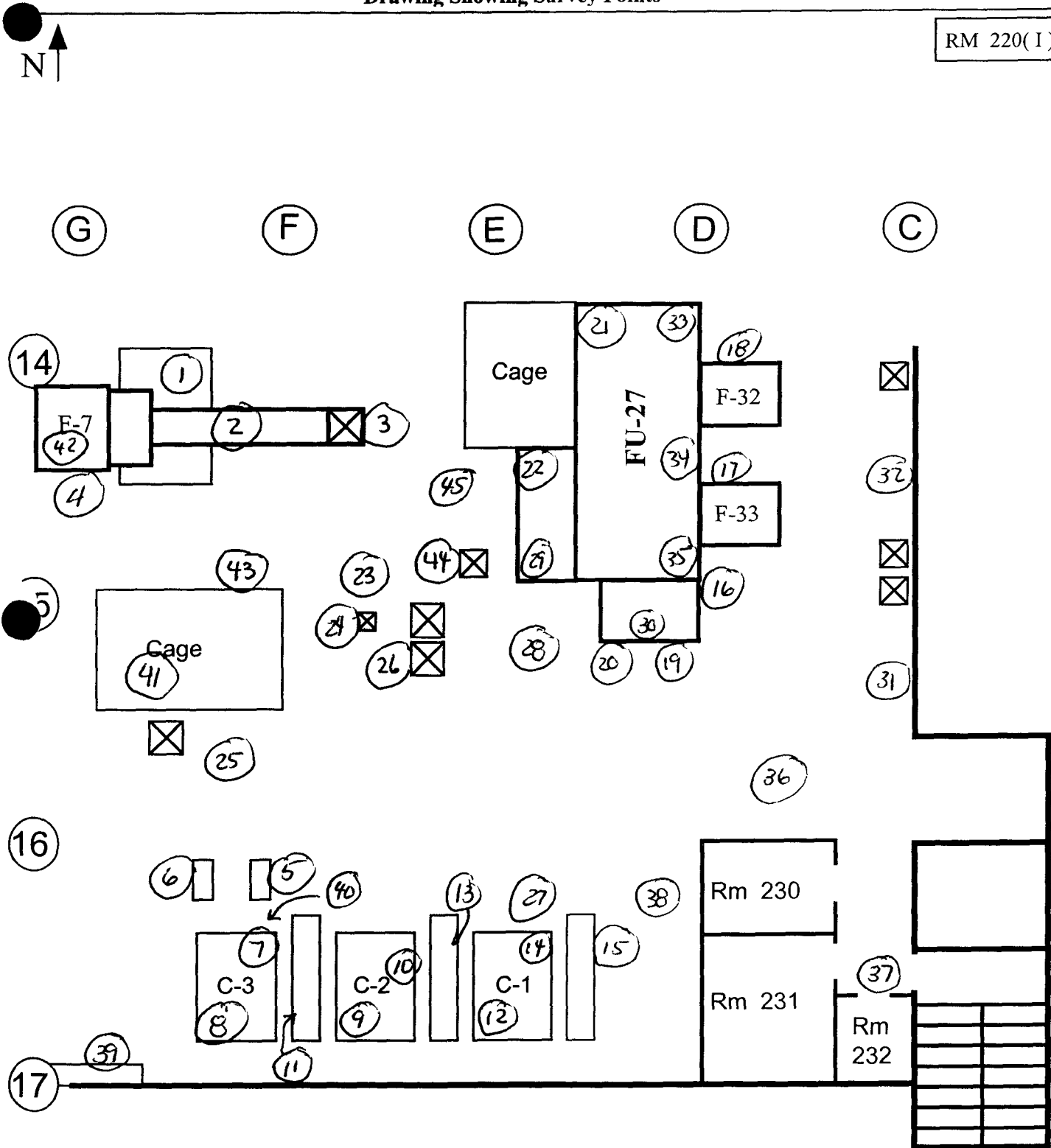
N A

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

RM 220(I)



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-11-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.3 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>2.0</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.6%</u>
MDA <u>13.9 DPM</u>	MDA <u>11.5 DPM</u>	MDA <u>45 DPM</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>BC-833</u>	Serial # <u>BC-872</u>	Serial # <u>✓ A</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u></u>
Bkg <u>45 cpm</u>	Bkg <u>49 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>103.4 DPM</u>	MDA <u>107.5 DPM</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location Room 220 (I)
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 2-15-00 Time 0900

RCT

Print name / Signature / Emp #

Comments Ceiling / Walls > 2 meters Biased survey points1 minute pats and swipes See map for locations**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	>2	0	4	5	16	C	3	12	24
2	>2	0	4	19	17	C	0	24	24
3	>2	0	-8	0	18	C	0	-4	10
4	>2	0	-20	19	19	C	0	-20	15
5	>2	0	8	10	20	C	0	0	24
6	>2	0	68	29	21	C	0	-16	29
7	>2	0	-20	19	22	C	0	12	34
8	>2	0	52	10	23	C	0	-20	24
9	>2	0	-76	15	24	C	0	4	10
10	C	0	4	15	25	C	0	28	29
11	C	0	48	34	26	C	0	-12	15
12	C	0	40	24	27	C	0	28	19
13	C	3	-8	24	28	C	0	-4	5
14	C	0	-12	10	29	C	0	-8	10
15	C	0	-12	29	30	C	0	16	34

Date Reviewed 2-17-00 RS Supervision

202

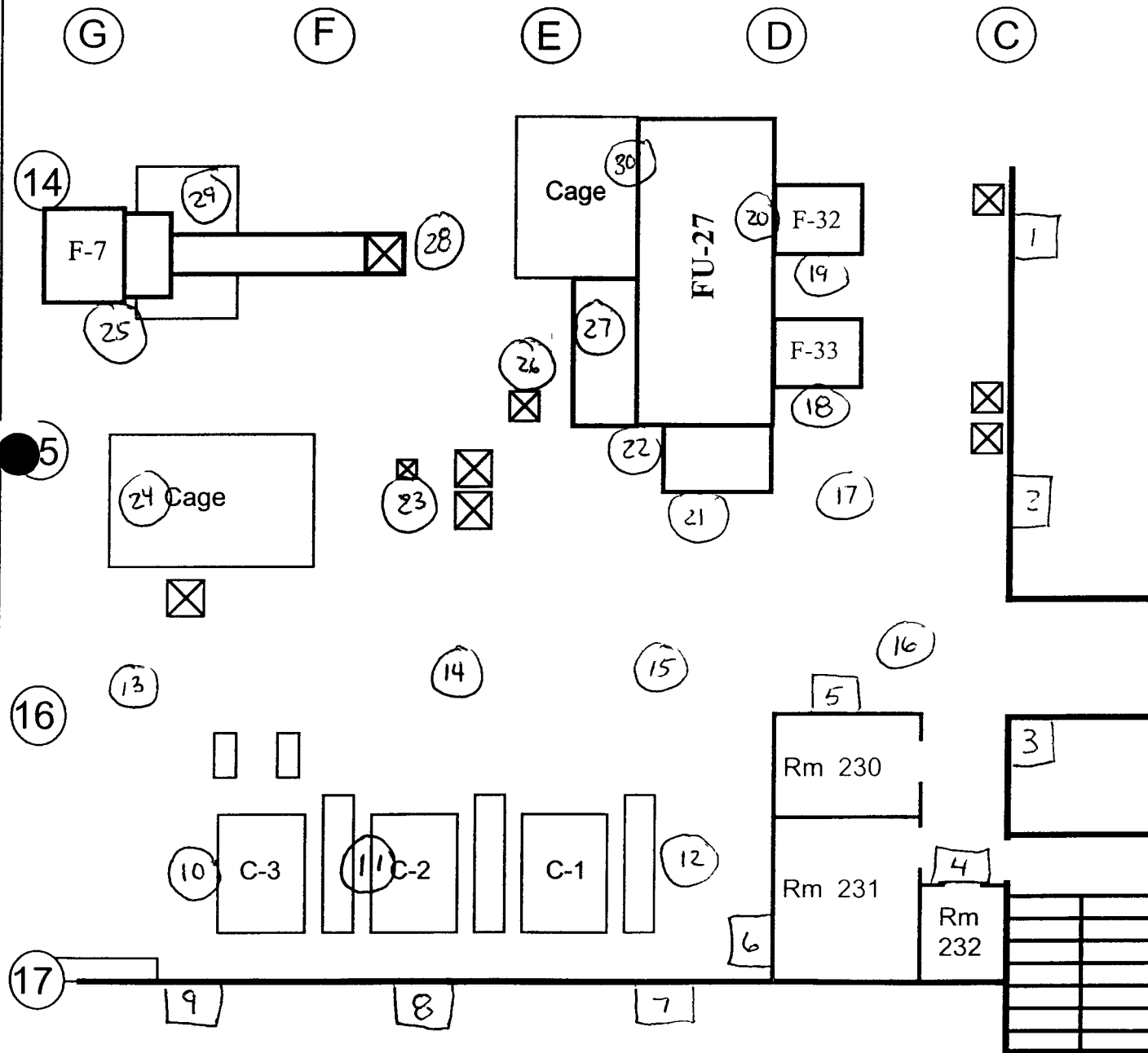
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

RM 220(I)

N ↑

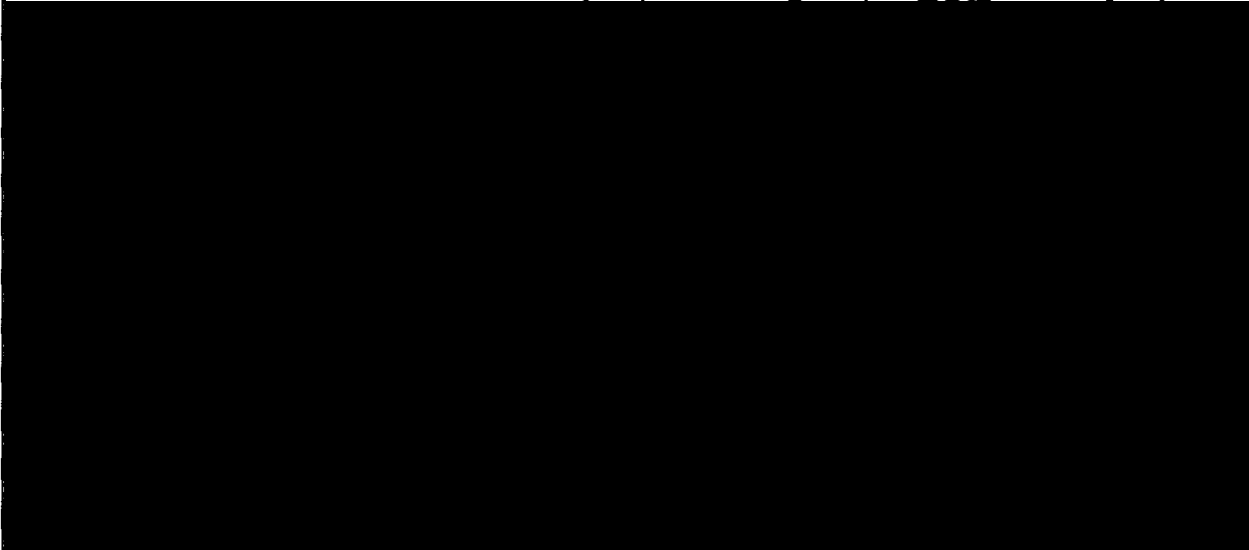


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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area J		Survey Unit N/A		Area (m ²) 640	
Survey Unit Description South West corner of room 220, 2 nd floor of Building 707 Area is South of Column K-14 and West of Column G-15 Building 707 radiological areas are posted as fixed contamination areas					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	55	45	0	0	55
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707		
Survey Area: J	Survey Unit: N/A		
Survey Unit Description: SOUTH WEST CORNER OF ROOM 220, 2 ND FLOOR OF BUILDING 707 AREA IS SOUTH OF COLUMN K-14 AND WEST OF COLUMN G-15 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS			
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____			
Justification for Classification: N/A			
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads			
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads Special security requirements for access to 2 nd floor			
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>			
Labeling Requirements: NONE			
Survey Package Implementation: 			
<small>RESS Manager Printed Name</small>	<small>Employee #</small>	<small>RESS Manager Signature</small>	<small>Date</small>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID. 99-0002		Building 707
Survey Area. J		Survey Unit N/A
Survey Unit Description. South West corner of room 220, 2 nd floor of Building 707 Area is South of Column K-14 and West of Column G-15 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	FLOORS/WALLS < 2 meters 30 unbiased survey points uniformly distributed throughout the area 25 biased survey points at the following locations <ul style="list-style-type: none"> - Points around floors adjacent to internally contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, cathene system, etc - Point near each airlock to the plenums - Near waste drum storage - Rooms 221, 222, 223, and maintenance cage area - Stained/discolored areas - Other areas of potential concern based on RCT judgement/experience CEILINGS/WALLS > 2 meters 30 biased surveys (divided evenly between wall and ceiling when possible) with focus on following areas <ul style="list-style-type: none"> - Walls behind process lines - Tops/sides of plenums - Stained or discolored areas - Areas around pipe or other penetrations EQUIPMENT 45 biased survey points on equipment with one or more samples from <ul style="list-style-type: none"> - Equipment which has visible leaks or contained spills beneath them - Survey points at exhaust ducts - 5 survey points on top of overhead piping (where locations are accessible) - Fixed equipment in maintenance cage - Other areas of potential concern based on RCT judgement/experience 	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4 <i>J 3/22/00 Ckg #5</i>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707
Survey Area: J		Survey Unit N/A
Survey Unit Description: South West corner of room 220, 2 nd floor of Building 707 Area is South of Column K-14 and West of Column G-15 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 55 1 m ² surface scans shall be taken at each location identified for surface activity measurements Locations found above the DCGL shall be documented CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NONE (2 nd Floor of 707 does not have painted floors)	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Page Superseded 01/18/00 Chg #2
 SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID 99-0002	Building 707
Survey Area J	Survey Unit N/A
Survey Unit Description: South West corner of room 220, 2 nd floor of Building 707 Area is South of Column K-14 and West of Column G-15 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID 99-0002	Building 707
Survey Area. J	Survey Unit N/A
Survey Unit Description South West corner of room 220, 2 nd floor of Building 707 Area is South of Column K-14 and West of Column G-15 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: J	Survey Unit N/A
Survey Unit Description: South West corner of room 220, 2 nd floor of Building 707 Area is South of Column K-14 and West of Column G-15 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

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Page superseded 01/18/00 by Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building: 707
Survey Area: J	Survey Unit: N/A
Survey Unit Description. South West corner of room 220, 2 nd floor of Building 707 Area is South of Column K-14 and West of Column G-15 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc) 	

[illegible]

Package ID. 99-0002	Building. 707	
Survey Area: J	Survey Unit N/A	
Survey Type. Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/>		
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	1	1
Total Activity Surveys	1	1
Exposure Rate Surveys	N/A	N/A
Removable Surveys	1	1
Media Samples	N/A	N/A
Volumetric Samples	N/A	N/A
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	1	1
Total Activity Surveys	1	1
Exposure Rate Surveys	N/A	N/A
Removable Surveys	1	1
Media Samples	N/A	N/A
Volumetric Samples	N/A	N/A
Comments All survey points identified on survey maps.		
<div style="background-color: black; height: 100px; width: 100%;"></div>		
RESS Manager Printed Name	Employee #	RESS Manager Signature
		Date

Page superseded 2/29/00 *Q* Change #4

NORTH CAROLINA ENVIRONMENTAL TECHNOLOGY SURVEY

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____
Model _____	Model _____	Model _____	Building _____
Serial # _____	Serial # _____	Serial # _____	Location* _____
Cal Due _____	Cal Due _____	Cal Due _____	Purpose _____
Bkg _____	Bkg. _____	Bkg _____	RWP # _____
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____
			Print name Signature Emp #
Mfg. _____	Mfg _____	Mfg _____	RCT _____ / _____ / _____
Model _____	Model _____	Model _____	Print name Signature Emp #
Serial # _____	Serial # _____	Serial # _____	
Cal Due _____	Cal Due _____	Cal Due _____	
Bkg _____	Bkg _____	Bkg _____	
Efficiency _____	Efficiency _____	Efficiency _____	
MDA _____	MDA _____	MDA _____	

PRL #: _____

Comments: _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1 _____	_____	_____	_____	26 _____	_____	_____	_____
2 _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33 _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

Date Reviewed: _____

RS Supervision: _____

Print Name

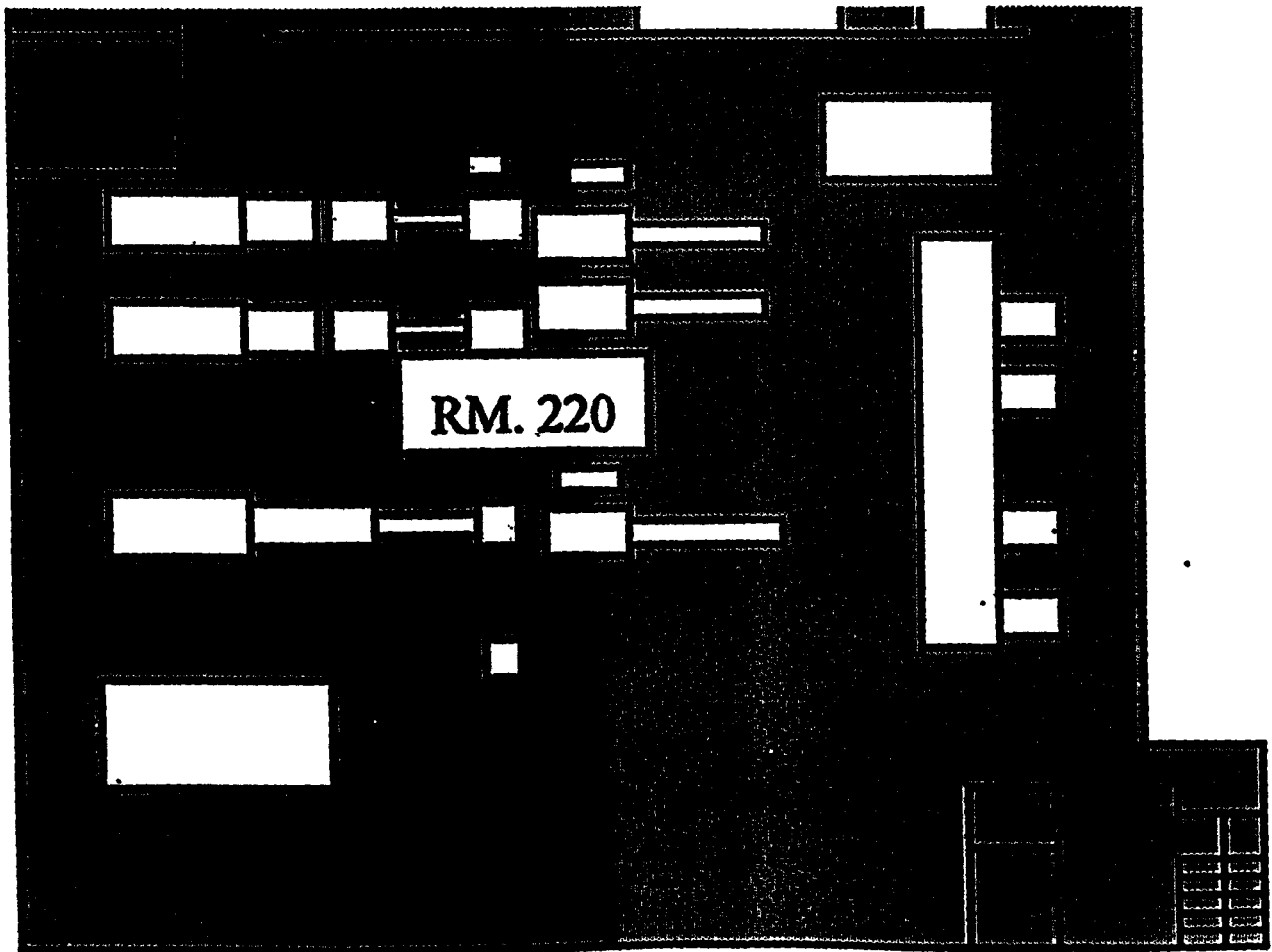
Signature

Emp #

215

209/466

RADIOLOGICAL SAFETY
Drawing Showing Survey Points



746

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1518</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.3 cpm</u>	Bkg <u>0.4 cpm</u>	Bkg <u>3.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>2186%</u>
MDA <u>13.9 dpm</u>	MDA <u>14.8 dpm</u>	MDA <u>493 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>833</u>	Serial # <u>872</u>	Serial # <u></u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>N/A</u>
Bkg <u>4.3 cpm</u>	Bkg <u>1.8 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>101.3 dpm</u>	MDA <u>106.5 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location Room 220 (J)
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 2-9-00 Time 1100

RCT N/A
 Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Unbiased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F	3	-12	27	16	F	0	8	27
2	F	3	28	5	17	F	0	-12	-5
3	F	0	60	9	18	F	0	-60	18
4	F	0	0	-5	19	F	0	-36	14
5	F	0	-8	-5	20	F	0	4	14
6	F	0	16	0	21	F	0	0	27
7	F	0	-4	18	22	F	0	-20	14
8	F	0	-32	-9	23	F	0	-16	9
9	F	0	60	-18	24	F	0	20	0
10	F	0	8	23	25	W < 2	6	0	9
11	F	0	20	9	26	W < 2	0	8	0
12	F	3	28	9	27	W < 2	0	-40	9
13	F	0	20	9	28	W < 2	0	8	23
14	F	0	8	0	29	W < 2	0	-8	0
15	F	0	-24	23	30	W < 2	0	4	-5

Date Reviewed: 2-17-00 RS Supervisor

Print Name

Signature

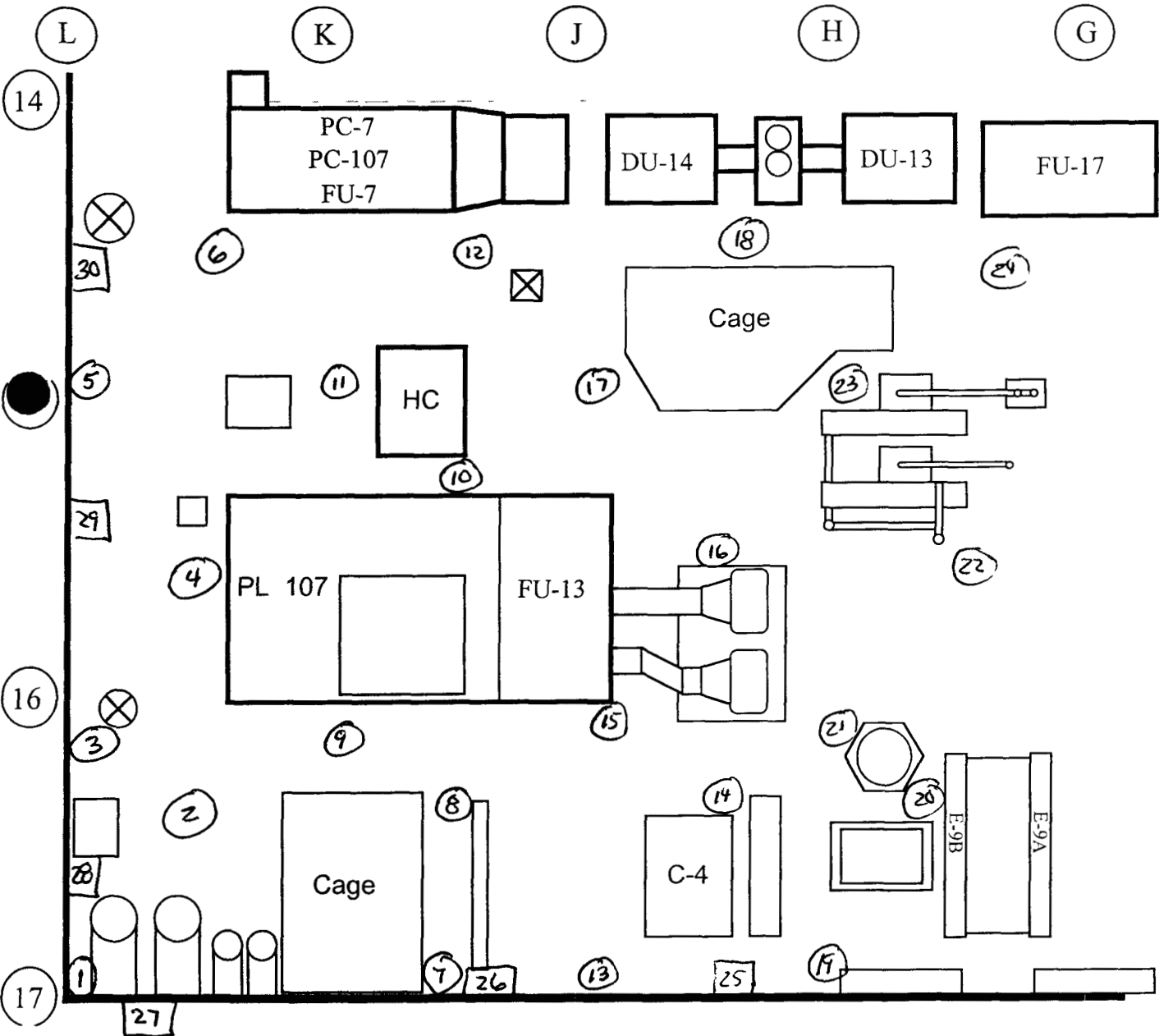
Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL

Drawing Showing Survey Points

RM 220(J)



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1518</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.3 cpm</u>	Bkg <u>0.4 cpm</u>	Bkg <u>3.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>2186</u>
MDA <u>139 dpm</u>	MDA <u>143 dpm</u>	MDA <u>493 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>833</u>	Serial # <u>872</u>	Serial # <u>N/A</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u></u>
Bkg <u>45 cpm</u>	Bkg <u>48 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>1034 dpm</u>	MDA <u>1065 dpm</u>	MDA <u></u>

Survey Type Contamination
 Building 707
 Location Room 220 (J)
 Purpose Reconnaissance Level Characterization

RWP # 00-707 1204Date 2-10-00 Time 1500

RCT _____
 Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Biased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location\Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F	0	52	37	16	F	0	28	9
2	F	0	-40	28	17	F	0	16	28
3	F	0	12	37	18	F	0	0	46
4	F	0	28	14	19	F	0	-24	37
5	F	0	-8	19	20	F	0	0	14
6	F	0	0	28	21	F	0	4	14
7	F	0	-16	19	22	F	3	-4	32
8	F	0	-24	46	23	F	6	-32	23
9	F	0	52	46	24	F	0	24	9
10	F	0	-16	23	25	F	6	28	14
11	F	0	24	23	26	end of Survey			
12	F	0	-4	37	27				
13	F	3	0	23	28				
14	F	0	-12	37	29				
15	F	0	-12	14	30				

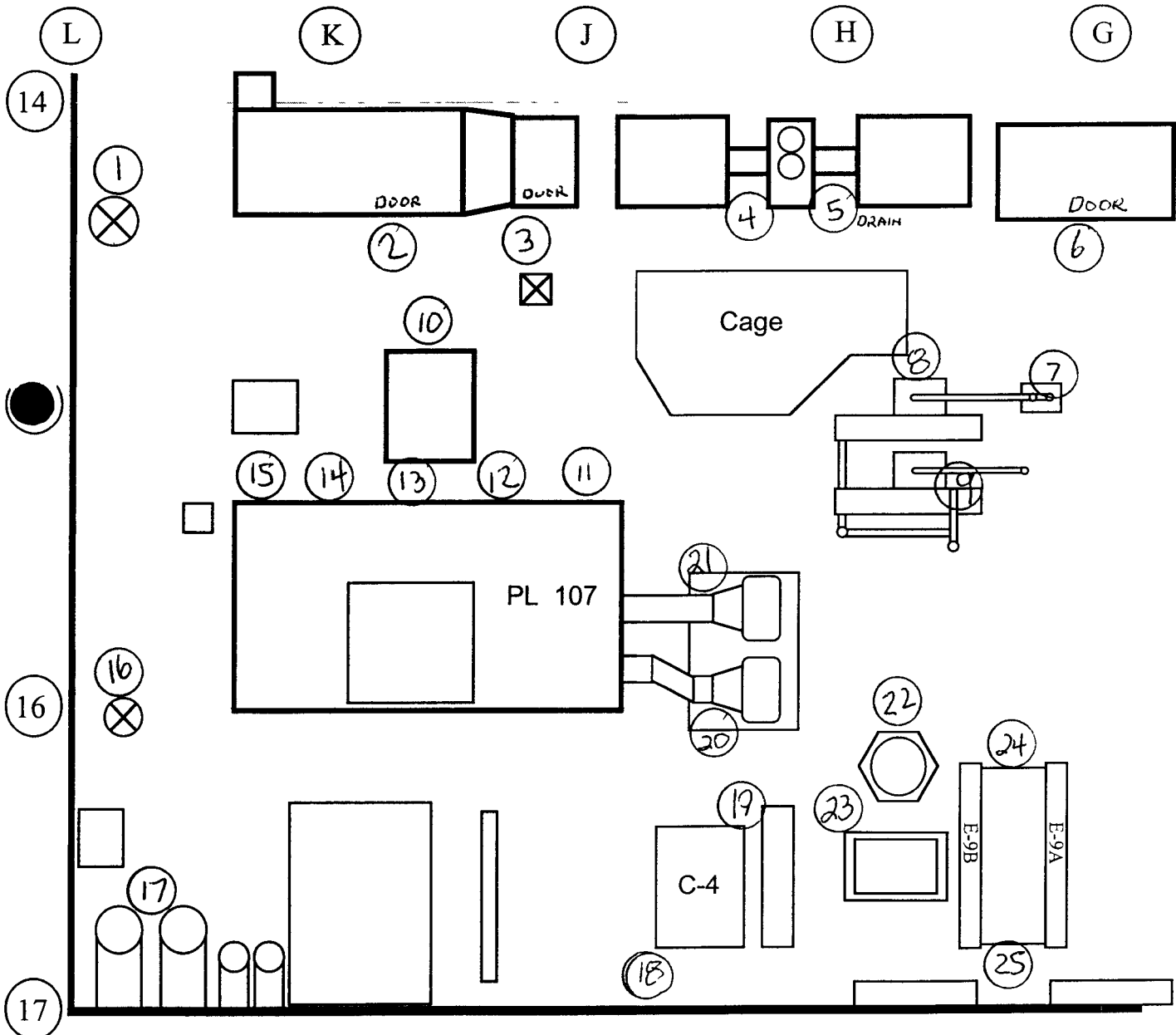
Date Reviewed: 2-17-00 RS Supervision: _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

RM 220(J)

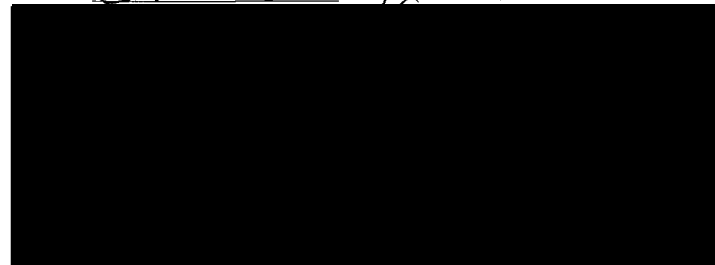


ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

* Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1518</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.0 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>0.1 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.86%</u>
MDA <u>8.2 dpm</u>	MDA <u>11.5 dpm</u>	MDA <u>33.7 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NE TECH</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>ELECTRA</u>
Serial # <u>833</u>	Serial # <u>872</u>	Serial # <u>1233</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>44 cpm</u>	Bkg <u>46 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>20.63%</u>
MDA <u>102.4 dpm</u>	MDA <u>104.5 dpm</u>	MDA <u>35.7 dpm</u>

Survey Type Contamination

Building 707
 Location Room 200 (J)
 Purpose Reconnaissance Level Characterization

RWP # 00 707-1204Date 2-14-00 Time 1035Comments Equipment Biased survey points1 minute pats and swipes See map for locations34-44 > 2 metersNo Fixed Equipment in maintenance cage**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Door Fu-7	0	28	28	16	Top Pl-107	0	-12	19
2	Door HC-107A	1	-20	37	17	Above SAAM 37	3	-16	37
3	Top HC-107A	3	32	23	18	Fgn F-117A	3	20	23
4	Top Fu-7	3	-12	32	19	Tank	0	-40	37
5	Tank	0	-12	0	20	Pump	0	-4	23
6	Door Fu-17	0	-44	14	21	Pump	0	-20	23
7	Top DU-13	0	-16	37	22	Pump	3	-20	28
8	Door Fu-13 ^{PL 107}	3	-4	37	23	C-4	0	24	32
9	Door Fu-13 ^{PL 107}	0	-4	23	24	C-4	3	16	28
10	Door Pl-107	0	-20	64	25	E-9B	0	40	23
11	Door Pl-107	0	0	42	26	E-9A	0	-12	14
12	Door Pl-107	3	16	28	27	Pipe	0	4	9
13	Door HC-107	0	-12	37	28	Pipe	0	784	23
14	Top HC-107	0	0	23	29	Top Pl-107	3	-16	0
15	Top Pl-107	0	28	23	30	Top Pl-107	0	24	14

Date Reviewed: 2-17-00 RS Supervision: 

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

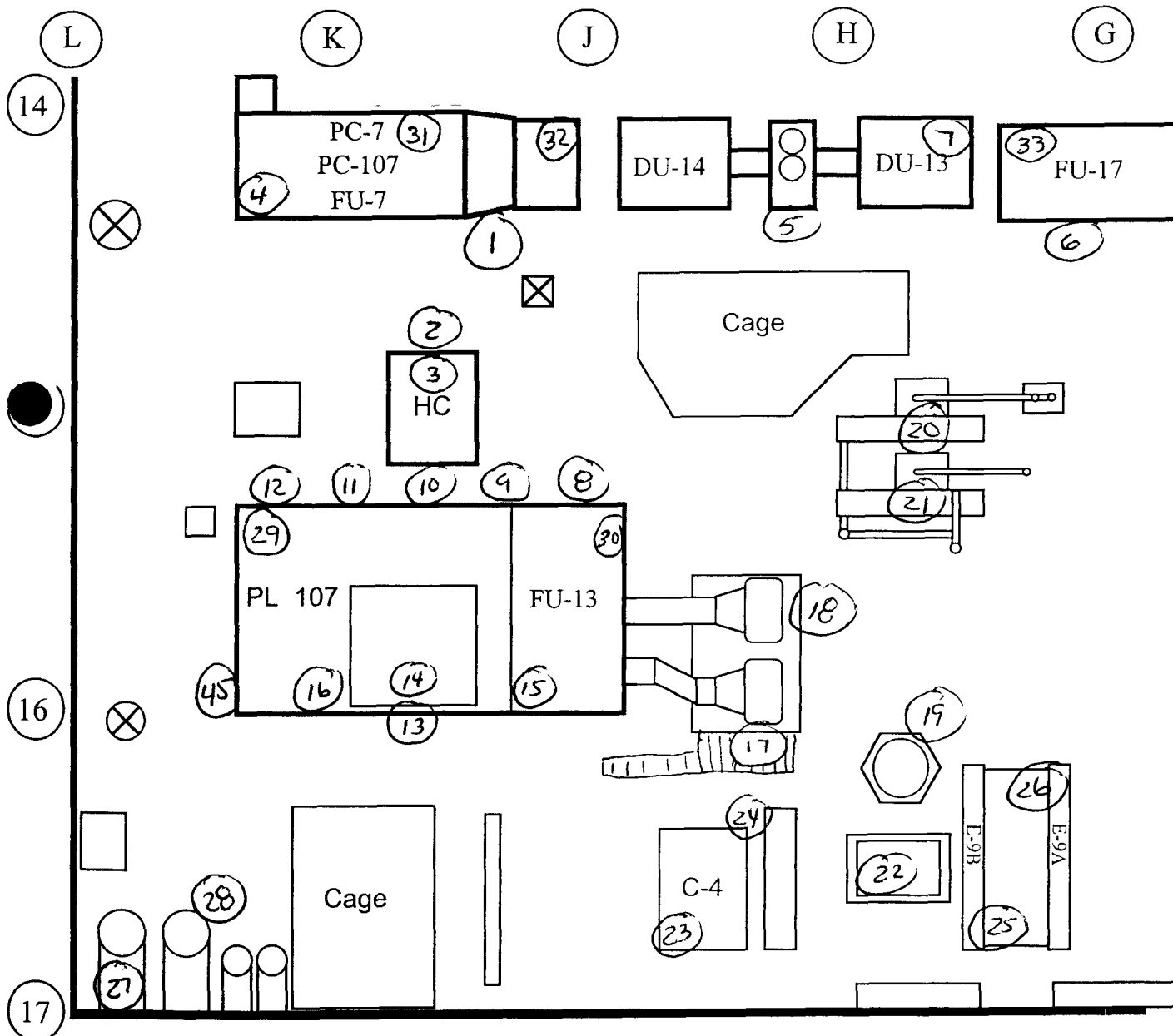
Point #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	Top Fu-7	0	48	1	61				
32	Top Fu-7	0	28	5	62				
33	Top Fu-17	0	12	9	63				
34	Duct	0	28	5	64				
35	Pipe	0	12	24	65				
36	Duct	0	24	10	66				
37	Brine Water	0	4	15	67				
38	I-Beam	0	60	9	68				
39	Wire tray	3	12	24	69				
40	Wire tray	0	4	10	70				
41	Pipe	0	12	10	71				
42	Duct	0	20	19	72				
43	Duct	0	4	10	73				
44	Duct	0	36	29	74				
45	PE-TRAP	0	24	0	75	N/A			
46	END OF SURVEY				76				
47					77				
48					78				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGIC 1

Drawing Showing Survey Points

RM 220(J)

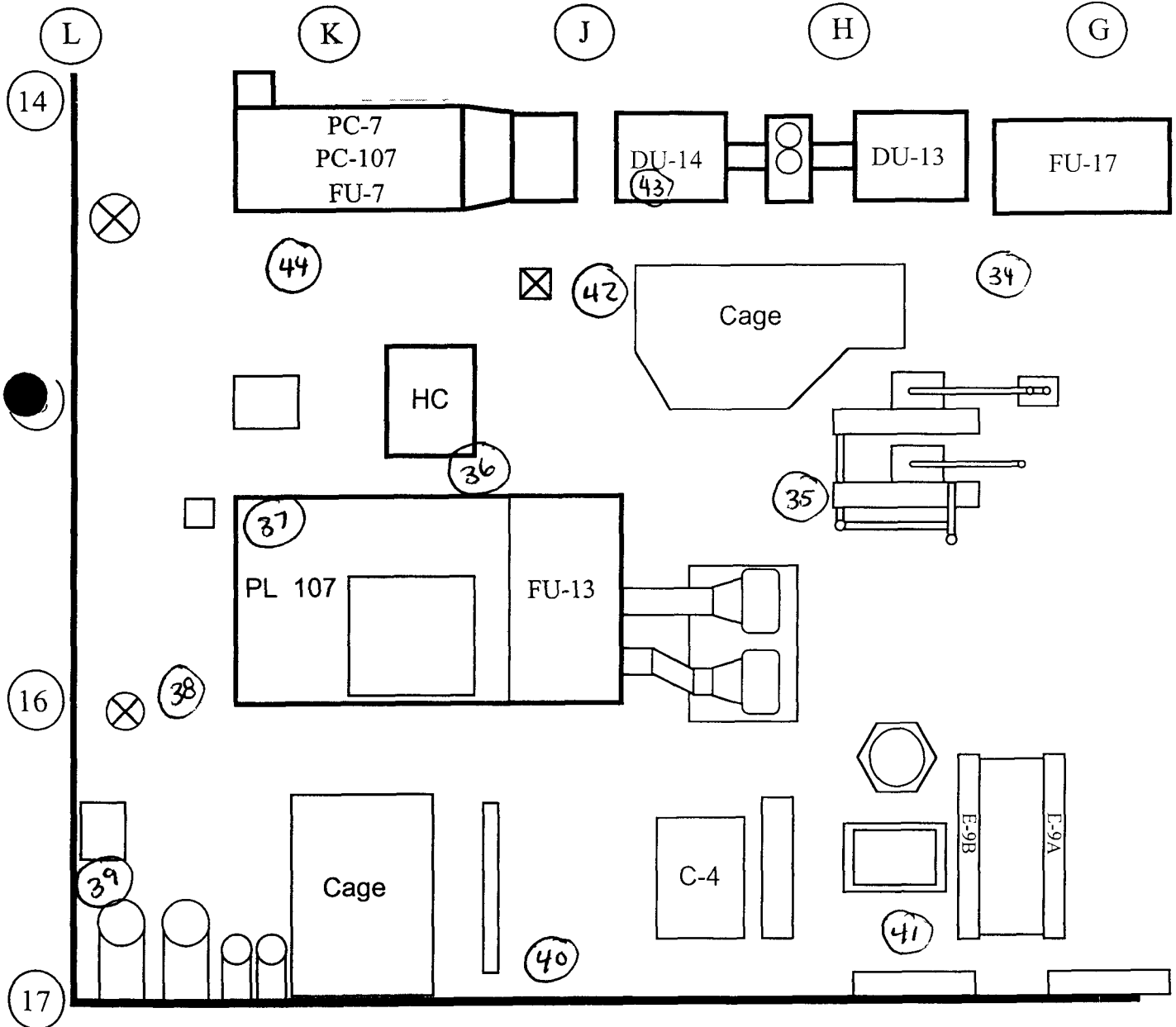


ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL

Drawing Showing Survey Points

RM 220(J)



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**Survey Type ContaminationBuilding 707Location Room 220 (J)Purpose Reconnaissance Level CharacterizationRWP # 00 - 707 - 1204Date 2-16-00 Time 1400

RCT

Print name / Signature / Emp #

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.0 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.63%</u>
MDA <u>12.9 dpm</u>	MDA <u>8.2 dpm</u>	MDA <u>13.1 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>BC-833</u>	Serial # <u>BC-872</u>	Serial # <u>✓</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>A</u>
Bkg <u>42 cpm</u>	Bkg <u>46 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>100.3 dpm</u>	MDA <u>104.5 dpm</u>	MDA <u></u>

Comments Ceiling / Walls > 2 meters Biased survey points1 minute pats and swipes See map for locations**SURVEY RESULTS**

Swipe #	Location\Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	> 2	0	-12	0	16	C	0	-8	34
2	> 2	0	0	15	17	C	1	-12	24
3	> 2	3	8	10	18	C	0	28	19
4	> 2	0	4	0	19	C	0	-8	29
5	> 2	6	4	24	20	C	0	40	29
6	> 2	0	-20	19	21	C	0	-4	19
7	> 2	0	0	10	22	C	0	-12	43
8	C	0	16	19	23	C	0	20	19
9	C	0	12	29	24	C	3	-12	34
10	C	0	-48	24	25	C	0	8	15
11	C	3	12	19	26	C	3	8	24
12	C	9	-24	19	27	C	0	-4	29
13	C	3	-24	19	28	C	6	16	19
14	C	3	-4	10	29	C	0	12	15
15	C	3	24	19	30	C	0	-20	34

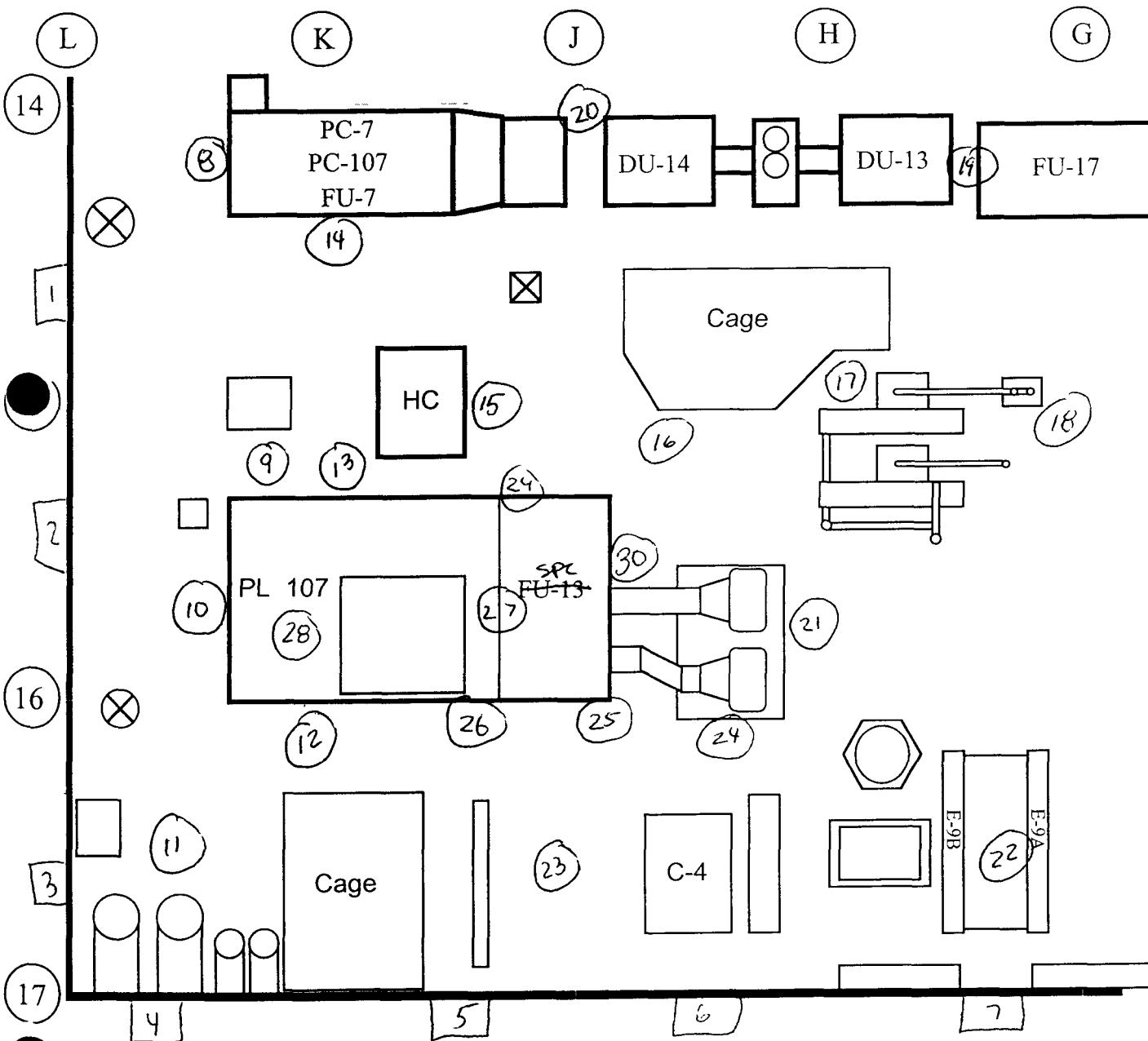
Date Reviewed 2-17-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL

Drawing Showing Survey Points

RM 220(J)



[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002			Building 707		Type 3
Survey Area K			Survey Unit N/A		Area (m ²) 523
Survey Unit Description Northern portion of room 240, 2 nd floor of Building 707 Area is North of Columns M-3, N-3, O-3, P-3					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	55	45	0	0	55
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707
Survey Area: K	Survey Unit: N/A
Survey Unit Description: NORTHERN PORTION OF ROOM 240, 2 ND FLOOR OF BUILDING 707 AREA IS NORTH OF COLUMNS M-3, N-3, O-3, P-3 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads Special security requirements for access to 2 nd floor	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation:	
<div style="border: 1px solid black; height: 200px; width: 100%;"></div>	
RESS Manager Printed Name	Employee # RESS Manager Signature Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707
Survey Area: K		Survey Unit N/A
Survey Unit Description: Northern portion of room 240, 2 nd floor of Building 707 Area is North of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>30 <u>unbiased</u> survey points uniformly distributed throughout the area</p> <p>25 <u>biased</u> survey points at the following locations</p> <ul style="list-style-type: none"> - Points around floors adjacent to internally contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, etc - Point near each airlock to the plenums - Near waste drum storage - Other areas of potential concern based on RCT judgement/experience <p>CEILINGS/WALLS > 2 meters</p> <p>30 <u>biased</u> surveys (divided evenly between wall and ceiling when possible) with focus on following areas</p> <ul style="list-style-type: none"> - Walls behind process lines - Tops/sides of plenums - Stained or discolored areas - Areas around pipe or other penetrations <p>EQUIPMENT</p> <p>45 <u>biased</u> survey points on equipment with one or more samples from</p> <ul style="list-style-type: none"> - Equipment which has visible leaks or contained spills beneath them - Survey points at exhaust ducts - 5 survey points on top of overhead piping (where locations are accessible) - Other areas of potential concern based on RCT judgement/experience 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID 99-0002		Building 707
Survey Area K		Survey Unit N/A
Survey Unit Description: Northern portion of room 240, 2 nd floor of Building 707 Area is North of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 55 1 m ² surface scans shall be taken at each location identified for surface activity measurements Locations found above the DCGL shall be documented CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NONE (2 nd Floor of 707 does not have painted floors)	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Page superseded 01/18/00 JF Chg #2

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building: 707
Survey Area: K	Survey Unit: N/A
Survey Unit Description: Northern portion of room 240, 2 nd floor of Building 707 Area is North of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none">- Direct alpha contamination- Direct beta contamination- Removable alpha contamination- Removable beta contamination- 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: K	Survey Unit N/A
Survey Unit Description. Northern portion of room 240, 2 nd floor of Building 707 Area is North of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none">- Direct alpha contamination- Removable alpha contamination- Removable beta contamination- 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

Page superseded 01/18/00 JH Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: K	Survey Unit N/A
Survey Unit Description: Northern portion of room 240, 2 nd floor of Building 707 Area is North of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i e , non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e g , elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e g , indicate which direction is North) • Other appropriate information (e g , "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building: 707
Survey Area: K	Survey Unit: N/A
Survey Unit Description: Northern portion of room 240, 2 nd floor of Building 707 Area is North of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 707	
Survey Area K		Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys		1	<i>[Signature]</i>
Total Activity Surveys		1	<i>[Signature]</i>
Exposure Rate Surveys		N/A	N/A
Removable Surveys		1	<i>[Signature]</i>
Media Samples		N/A	N/A
Volumetric Samples		N/A	N/A
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys		1	<i>[Signature]</i>
Total Activity Surveys		1	<i>[Signature]</i>
Exposure Rate Surveys		N/A	N/A
Removable Surveys		1	<i>[Signature]</i>
Media Samples		N/A	N/A
Volumetric Samples		N/A	N/A
Comments			
<i>All survey points identified on survey maps.</i>			
<i>[Redacted Area]</i>			

REMOVABLE AND DIRECT MONITORING TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____
Model _____	Model _____	Model _____	Building. _____
Serial # _____	Serial # _____	Serial # _____	Location* _____
Cal Due _____	Cal Due _____	Cal Due _____	Purpose _____
Bkg. _____	Bkg. _____	Bkg. _____	RWP # _____
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____
Mfg. _____	Mfg. _____	Mfg. _____	Print name _____ Signature _____ Emp # _____
Model _____	Model _____	Model _____	RCT _____ / _____ / _____
Serial # _____	Serial # _____	Serial # _____	Print name _____ Signature _____ Emp # _____
Cal Due _____	Cal Due _____	Cal Due _____	
Bkg. _____	Bkg. _____	Bkg. _____	
Efficiency _____	Efficiency _____	Efficiency _____	
MDA _____	MDA _____	MDA _____	

PRL # : _____

Comments _____

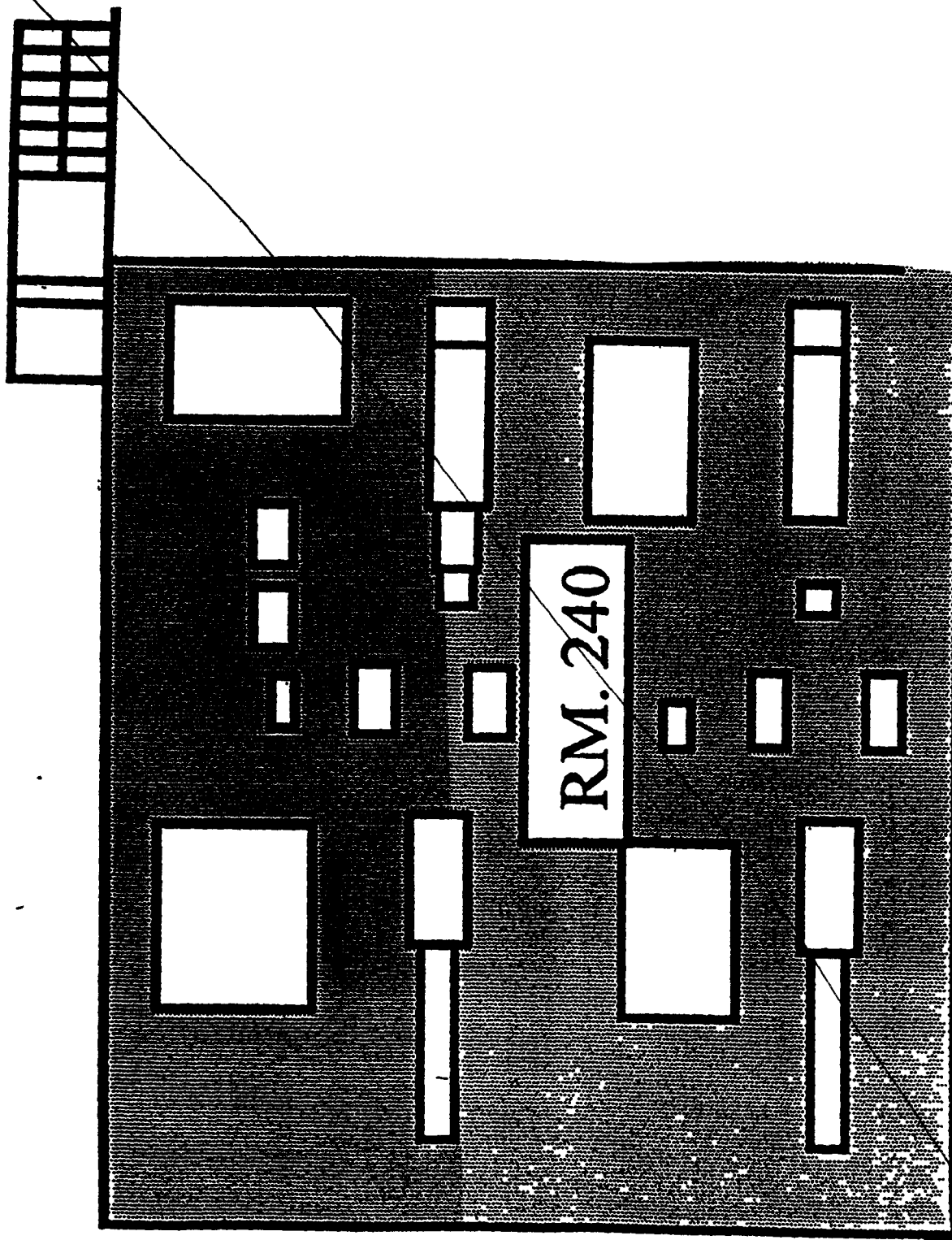
SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1 _____	_____	_____	_____	26 _____	_____	_____	_____
2 _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33 _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

Date Reviewed: _____ RS Supervision: _____ / _____
Print Name _____ Signature _____ Emp # _____

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3265</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.0 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.01%</u>
MDA <u>11.5 dpm</u>	MDA <u>8.2</u>	MDA <u>12.9 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>BC-833</u>	Serial # <u>BC-872</u>	Serial # <u>NA</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u></u>
Bkg <u>46 cpm</u>	Bkg <u>48 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>104.5 dpm</u>	MDA <u>106 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location Room 240 (K)
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 2-17-00 Time 1500

RCT _____
 Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Unbiased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location\Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	< 2	0	16	24	16	F	3	68	29
2	< 2	0	28	15	17	F	0	4	24
3	< 2	0	-4	24	18	F	3	-20	34
4	< 2	3	-12	5	19	F	0	-24	34
5	< 2	3	-16	10	20	F	0	16	57
6	< 2	0	-40	15	21	F	6	-4	43
7	F	0	4	19	22	F	0	-8	34
8	F	0	40	29	23	F	0	0	38
9	F	0	-8	34	24	F	3	36	38
10	F	6	12	34	25	F	0	-12	38
11	F	3	4	43	26	F	0	0	48
12	F	0	44	43	27	F	0	-20	48
13	F	0	0	43	28	F	0	0	24
14	F	0	4	19	29	F	3	-40	43
15	F	0	-8	43	30	F	6	-8	48

Date Reviewed: 2 23-00 RS Supervision.

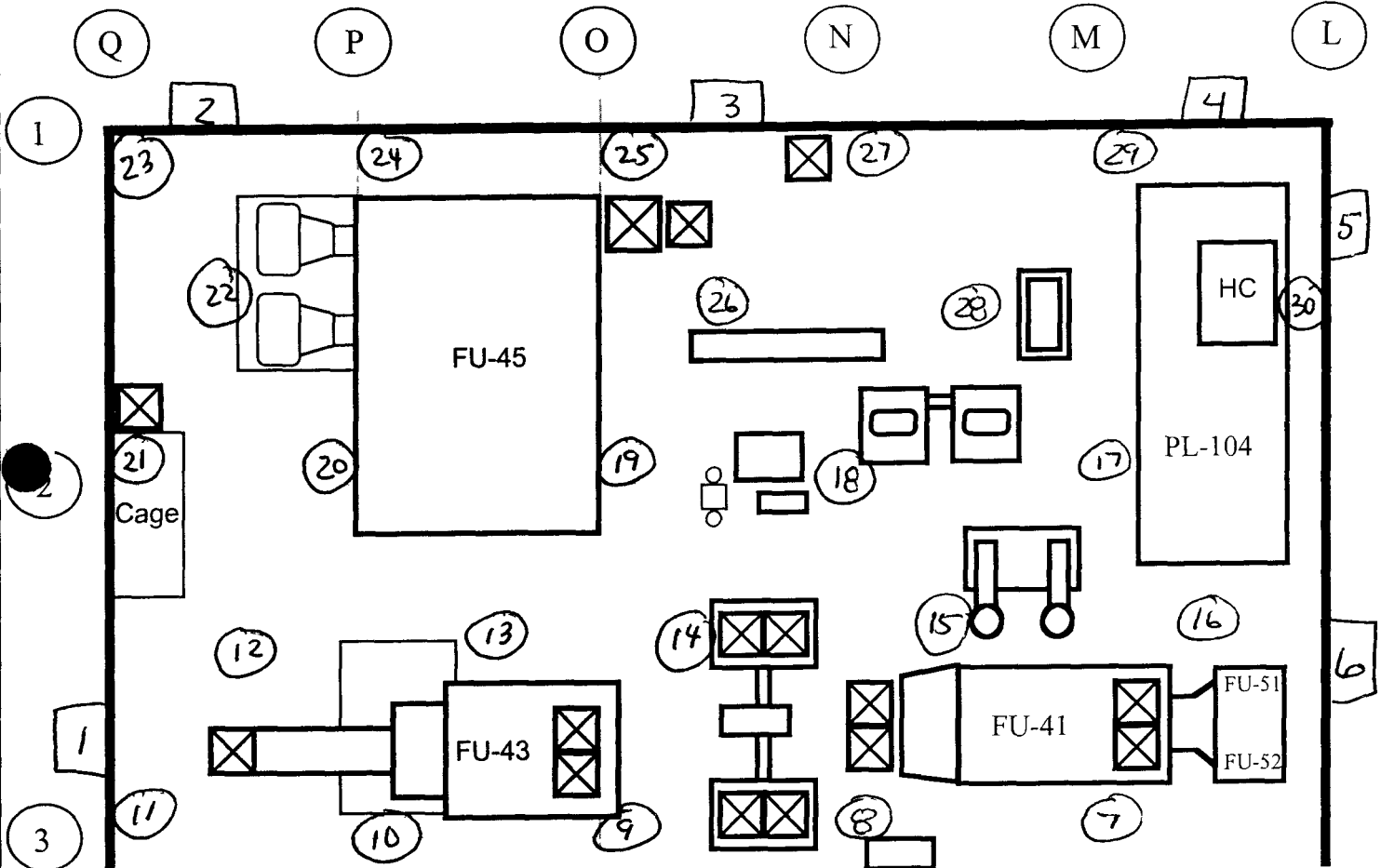
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICA

Drawing Showing Survey Points

RM 240(K)

N ↑



241

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA****Survey Type Contamination**Building 707Location Room 240 (K)Purpose Reconnaissance Level CharacterizationRWP # 00-707-1204Date 2-18-00 Time 1530

RCT

Print name / Signature / Emp #

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.4 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.63%</u>
MDA <u>14.8 DPM</u>	MDA <u>11.5 DPM</u>	MDA <u>13.1 DPM</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>BC-833</u>	Serial # <u>BC-872</u>	Serial # <u>N/A</u>
Cal Due <u>2-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>A</u>
Bkg <u>44 cpm</u>	Bkg <u>46 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>102.4 DPM</u>	MDA <u>104.5 DPM</u>	MDA <u></u>

Comments Floor / Walls < 2 meters Biased survey points1 m² scans, 1 minute pats and swipes See map for locations**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F - P-trap	0	4	10	16	F - Door FU-45	0	-12	34
2	F - Door PL-104	3	4	34	17	F - FAN	0	-8	5
3	F - Door PL-104	0	-36	19	18	F - FAN	0	-20	5
4	F - Door PL-104	0	-32	19	19	F - P-trap	0	-40	5
5	F - Door PL-104	0	8	29	20	F - Door FU-45	0	-16	15
6	F - Door PL-104	3	40	24	21	F - Pump	0	12	19
7	F - Drain	3	-20	24	22	F - Pump	0	0	24
8	F - FAN	9	20	19	23	F - ² ¹⁵ ^{cc} Pump Drain	0	-48	15
9	F - FU-51	3	16	39	24	F - Pump	3	-40	34
10	F - FU-52	0	-8	44	25	F - Pump	0	24	39
11	F - Door	3	0	34	26	END OF SURVEY			
12	F - Pump	3	36	48	27				
13	F - Tank	0	-12	34	28				
14	F - Door - FU-43	3	-16	24	29				
15	F - Door - FU-45	0	12	24	30				

Date Reviewed. 2-23-00 RS Supervisor

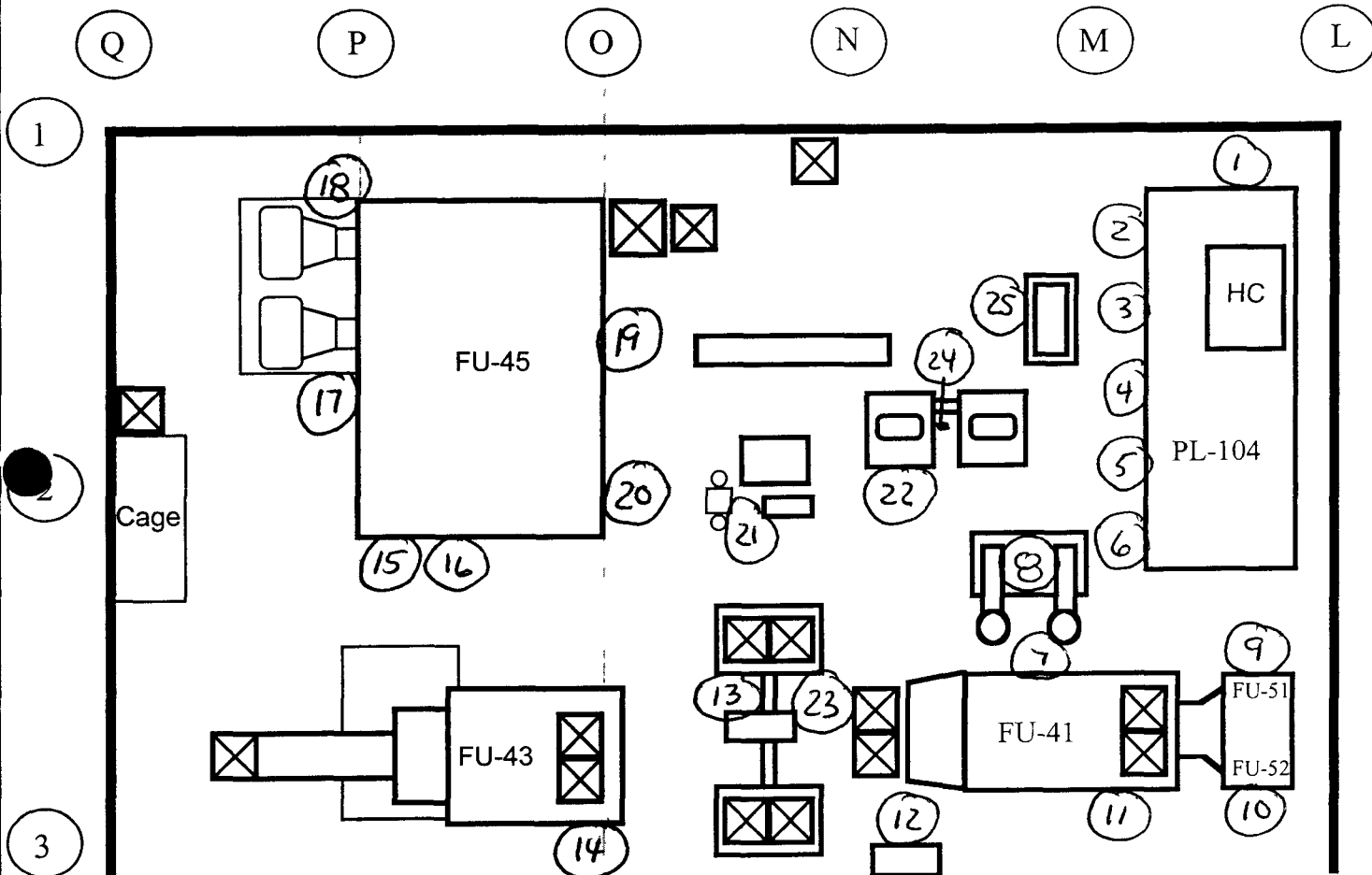
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SITE

Drawing Showing Survey Points

RM 240(K)

N ↑



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.3 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.63%</u>
MDA <u>12.9 DPM</u>	MDA <u>13.4 DPM</u>	MDA <u>13.1 DPM</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NE Tech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>BC-833</u>	Serial # <u>BC-872</u>	Serial # <u>3265</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>40 cpm</u>	Bkg <u>48 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>21.01%</u>
MDA <u>981 DPM</u>	MDA <u>106.5 DPM</u>	MDA <u>442 DPM</u>

Survey Type Contamination

Building 707

Location Room 240 (K)

Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 2-21-00 Time 1330

RCT _____

Print name / Signature / Emp #

Comments Equipment Biased survey points1 minute pats and swipes See map for locations22 - Labeled 1100 cpm Fixed25 - Labeled 5000 cpm Fixed**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Duct	0	0	10	16	Door PL-104	0	-40	19
2	Duct >2	0	-24	34	17	Door PL-104	3	12	29
3	Fu-43	0	28	19	18	Door PL-104	0	-16	24
4	Door Fu-43	0	32	19	19	Door PL-104	3	-16	29
5	Duct >2	0	-24	48	20	Door PL-104	6	12	133
6	Duct >2	0	-8	34	21	P-trap	0	68	34
7	Pump	0	16	15	22	Exhaust Duct	0	-40	see note
8	Top Fu-41	0	16	53	23	Pump	0	-8	10
9	Duct >2	0	-8	58	24	Top HC PL104	3	8	38
10	Door Fu-41	0	-32	38	25	Door HC PL104	9	20	see note
11	Duct	0	-20	290	26	Top PL 104	0	-8	44
12	Top Fu-51+52	0	-44	58	27	Top PL 104	0	0	34
13	Top PL-104	0	20	34	28	Duct >2	6	24	15
14	Top PL-104	15	12	24	29	P-trap	0	8	10
15	Duct >2	0	28	73	30	Duct >2	3	-4	0

Date Reviewed 2/23/00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	Door Fu-45	0	-40	0	61				
32	Top Fu-45	0	-16	24	62				
33	Top Fu-45	3	-32	24	63				
34	FAN	3	4	24	64				
35	Duct >2	0	-12	19	65				
36	Tank	0	-24	29	66				
37	Duct >2	3	40	53	67				
38	Door Fu-45	0	8	29	68				
39	Door Fu-45	0	24	34	69				
40	Top Fu-45	0	48	24	70				
41	FAN	0	-16	5	71				
42	FAN	3	-4	24	72				
43	Top Fu-45	0	-16	10	73				
44	Top Fu-45	0	36	15	74				
45	Top Fu-45	0	8	15	75	N/A			
46	END OF SURVEY				76				
47					77				
48					78				
49					79				
50					80				
51					81				
52					82				
53	N/A				83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGIC 41 S 21 ET

Drawing Showing Survey Points

RM 240(K)

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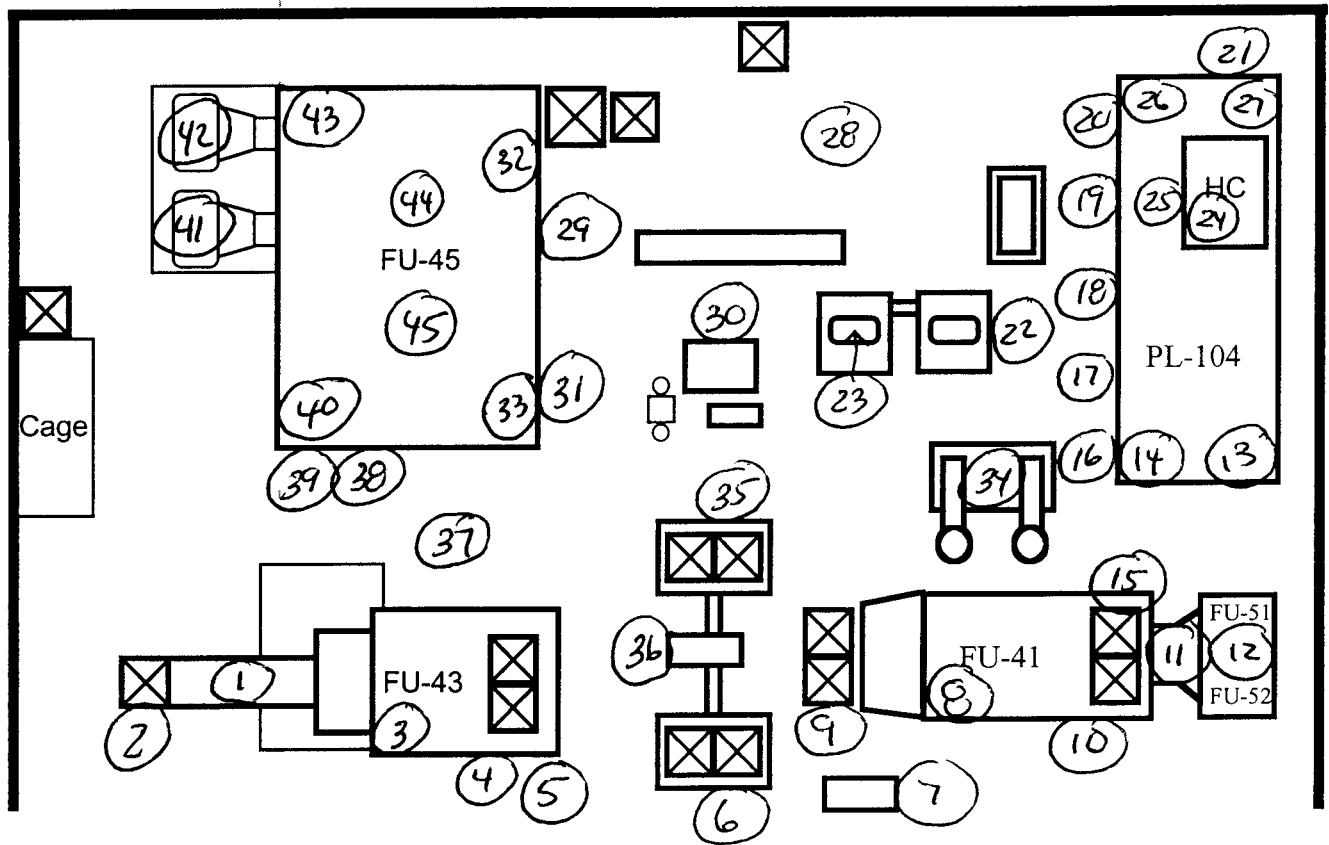
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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.3 cpm</u>	Bkg <u>0.3 cpm</u>	Bkg <u>4.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.6%</u>
MDA <u>139 dpm</u>	MDA <u>139 dpm</u>	MDA <u>582 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>833</u>	Serial # <u>872</u>	Serial # <u>N/A</u>
Cal Due <u>7-14-00</u>	Cal Due <u>7-12-00</u>	Cal Due <u>N/A</u>
Bkg <u>4.0 cpm</u>	Bkg <u>3.8 cpm</u>	Bkg <u>N/A</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>N/A</u>
MDA <u>981 dpm</u>	MDA <u>959 dpm</u>	MDA <u>N/A</u>

Survey Type Contamination

Building 707
 Location Room 240 (K) North
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 2-22-00 Time 1600

RCT _____
 Print name / Signature / Emp #

Comments Ceiling / Walls > 2 meters Biased survey points
1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location\Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	<u>W > 2</u>	<u>3</u>	<u>-24</u>	<u>19</u>	16	<u>C</u>	<u>3</u>	<u>36</u>	<u>-15</u>
2	<u>W > 2</u>	<u>0</u>	<u>32</u>	<u>-5</u>	17	<u>C</u>	<u>3</u>	<u>0</u>	<u>5</u>
3	<u>W > 2</u>	<u>0</u>	<u>-12</u>	<u>10</u>	18	<u>C</u>	<u>0</u>	<u>12</u>	<u>53</u>
4	<u>W > 2</u>	<u>3</u>	<u>-16</u>	<u>-5</u>	19	<u>C</u>	<u>3</u>	<u>40</u>	<u>-10</u>
5	<u>W > 2</u>	<u>0</u>	<u>-16</u>	<u>10</u>	20	<u>C</u>	<u>0</u>	<u>36</u>	<u>0</u>
6	<u>W > 2</u>	<u>0</u>	<u>12</u>	<u>15</u>	21	<u>C</u>	<u>0</u>	<u>8</u>	<u>-5</u>
7	<u>W > 2</u>	<u>0</u>	<u>32</u>	<u>10</u>	22	<u>C</u>	<u>0</u>	<u>28</u>	<u>-5</u>
8	<u>W > 2</u>	<u>3</u>	<u>52</u>	<u>19</u>	23	<u>C</u>	<u>0</u>	<u>48</u>	<u>15</u>
9	<u>W > 2</u>	<u>3</u>	<u>-24</u>	<u>15</u>	24	<u>C</u>	<u>0</u>	<u>-8</u>	<u>5</u>
10	<u>C</u>	<u>0</u>	<u>24</u>	<u>-5</u>	25	<u>C</u>	<u>6</u>	<u>20</u>	<u>5</u>
11	<u>C</u>	<u>0</u>	<u>12</u>	<u>0</u>	26	<u>C</u>	<u>3</u>	<u>44</u>	<u>24</u>
12	<u>C</u>	<u>3</u>	<u>24</u>	<u>0</u>	27	<u>C</u>	<u>0</u>	<u>16</u>	<u>10</u>
13	<u>C</u>	<u>0</u>	<u>0</u>	<u>34</u>	28	<u>C</u>	<u>0</u>	<u>16</u>	<u>24</u>
14	<u>C</u>	<u>0</u>	<u>48</u>	<u>19</u>	29	<u>C</u>	<u>0</u>	<u>-24</u>	<u>15</u>
15	<u>C</u>	<u>3</u>	<u>-12</u>	<u>24</u>	30	<u>C</u>	<u>0</u>	<u>24</u>	<u>15</u>

Date Reviewed. 2-23-00 RS Supervision

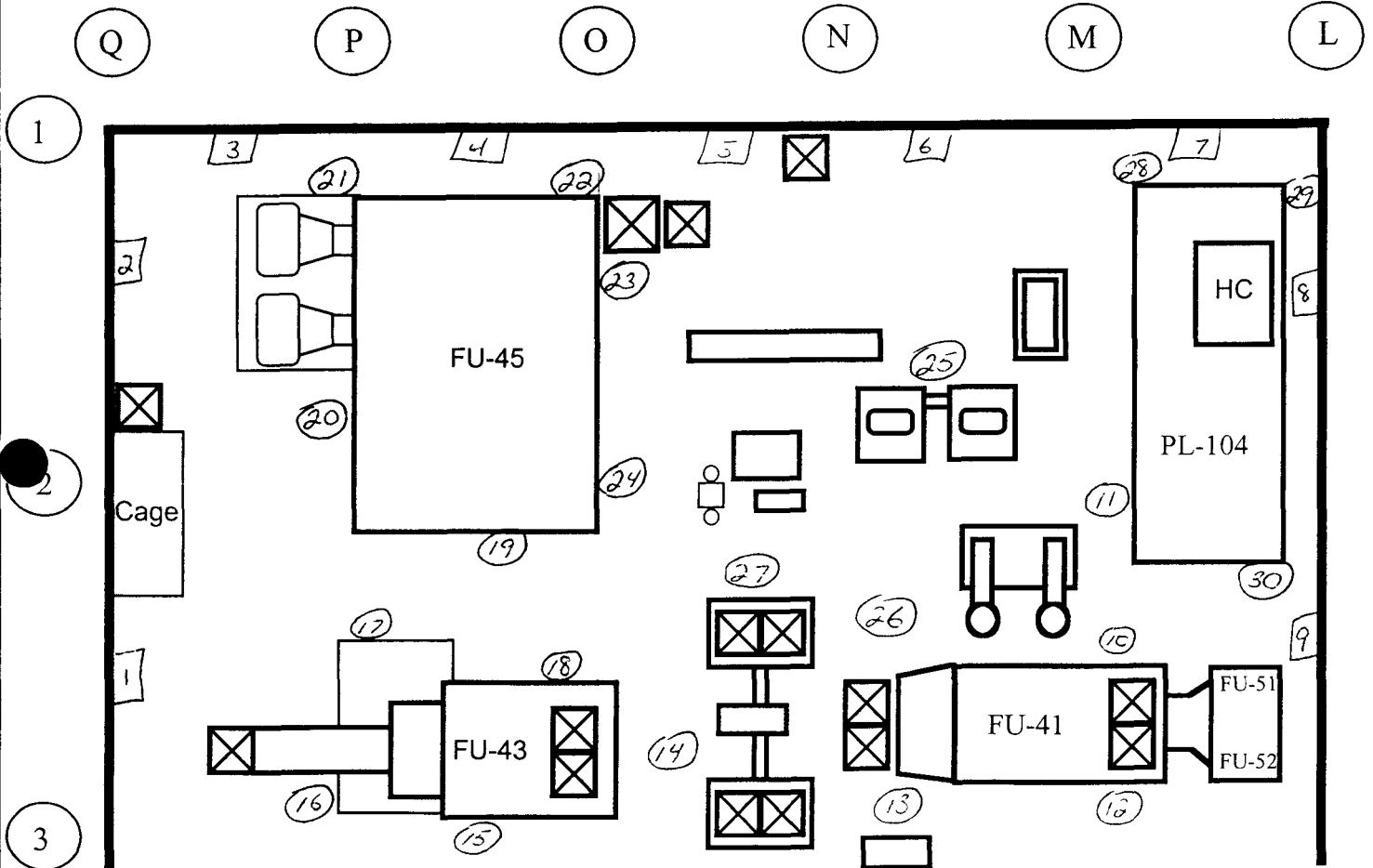
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGIC

Drawing Showing Survey Points

RM 240(K)

N ↑




SURVEY PACKAGE TRACKING FORM

[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area L		Survey Unit N/A		Area (m ²) 627	
Survey Unit Description Southern portion of room 240, 2 nd floor of Building 707 Area is South of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas					
Survey Type			Classification		
RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	55	45	0	0	55
Building.		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707
Survey Area: L	Survey Unit: N/A
Survey Unit Description: SOUTHERN PORTION OF ROOM 240, 2 ND FLOOR OF BUILDING 707 AREA IS SOUTH OF COLUMNS M-3, N-3, O-3, P-3 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads Special security requirements for access to 2 nd floor	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation: 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707
Survey Area L		Survey Unit N/A
Survey Unit Description: Southern portion of room 240, 2 nd floor of Building 707 Area is South of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	FLOORS/WALLS < 2 meters 30 <u>unbiased</u> survey points uniformly distributed throughout the area 25 <u>biased</u> survey points at the following locations <ul style="list-style-type: none"> - Points around floors adjacent to internally contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, etc - Point near each airlock to the plenums - Near waste drum storage - Other areas of potential concern based on RCT judgement/experience CEILINGS/WALLS > 2 meters 30 <u>biased</u> surveys (divided evenly between wall and ceiling when possible) with focus on following areas <ul style="list-style-type: none"> - Walls behind process lines - Tops/sides of plenums - Stained or discolored areas - Areas around pipe or other penetrations EQUIPMENT 45 <u>biased</u> survey points on equipment with one or more samples from <ul style="list-style-type: none"> - Equipment which has visible leaks or contained spills beneath them - Survey points at exhaust ducts - 5 survey points on top of overhead piping (where locations are accessible) - Other areas of potential concern based on RCT judgement/experience 	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID 99-0002		Building 707
Survey Area: L		Survey Unit N/A
Survey Unit Description: Southern portion of room 240, 2 nd floor of Building 707 Area is South of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 55 1 m ² surface scans shall be taken at each location identified for surface activity measurements Locations found above the DCGL shall be documented CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NONE (2 nd Floor of 707 does not have painted floors)	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

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By superseded 01/18/00 M Aug #2
SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building: 707
Survey Area: L	Survey Unit: N/A
Survey Unit Description: Southern portion of room 240, 2 nd floor of Building 707 Area is South of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: L	Survey Unit N/A
Survey Unit Description: Southern portion of room 240, 2 nd floor of Building 707 Area is South of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none">- Direct alpha contamination- Removable alpha contamination- Removable beta contamination- 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

Page superseded by 01/18/00 Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID 99-0002	Building 707
Survey Area L	Survey Unit N/A
Survey Unit Description: Southern portion of room 240, 2 nd floor of Building 707 Area is South of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

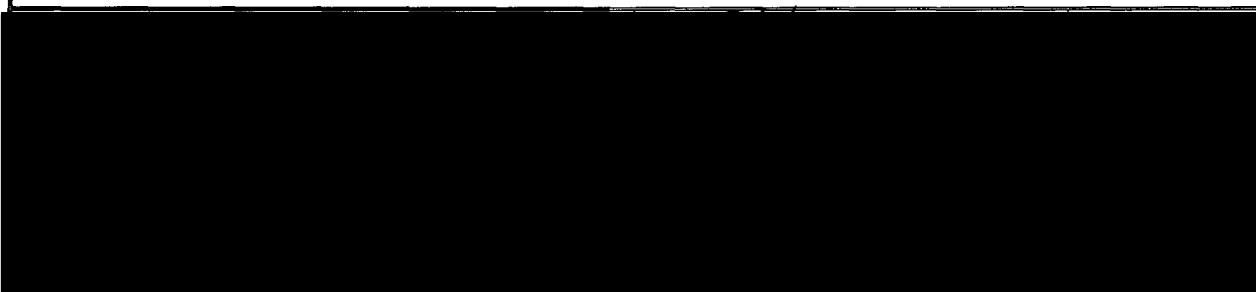
Package ID: 99-0002	Building: 707
Survey Area: L	Survey Unit: N/A
Survey Unit Description: Southern portion of room 240, 2 nd floor of Building 707 Area is South of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS:	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

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[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 707	
Survey Area: L		Survey Unit: N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys		1	1
Total Activity Surveys		1	1
Exposure Rate Surveys		NA	NA
Removable Surveys		1	1
Media Samples		NA	NA
Volumetric Samples		NA	NA
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys		1	1
Total Activity Surveys		1	1
Exposure Rate Surveys		NA	NA
Removable Surveys		1	1
Media Samples		NA	NA
Volumetric Samples		NA	NA
Comments All survey points present on survey diagrams			



ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____
Model _____	Model _____	Model _____	Building _____
Serial # _____	Serial # _____	Serial # _____	Location* _____
Cal Due _____	Cal Due _____	Cal Due _____	Purpose _____
Bkg. _____	Bkg. _____	Bkg. _____	RWP # _____
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____
			Print name _____ Signature _____ Emp # _____
Mfg. _____	Mfg. _____	Mfg. _____	RCT _____ / _____ / _____
Model _____	Model _____	Model _____	Print name _____ Signature _____ Emp # _____
Serial # _____	Serial # _____	Serial # _____	
Cal Due _____	Cal Due _____	Cal Due _____	
Bkg. _____	Bkg. _____	Bkg. _____	
Efficiency _____	Efficiency _____	Efficiency _____	
MDA _____	MDA _____	MDA _____	

PRL #: _____

Comments _____

SURVEY RESULTS

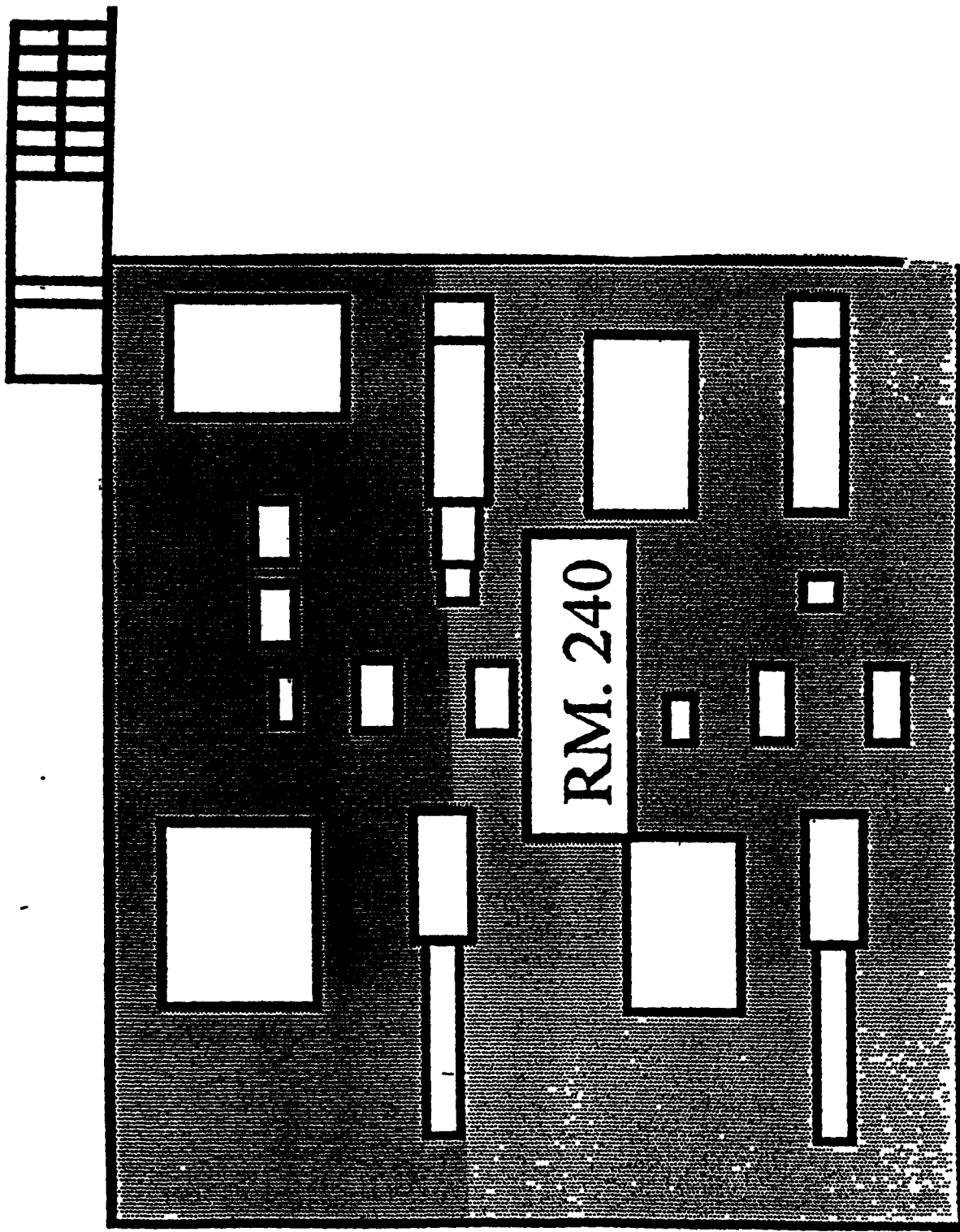
REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1				26			
2				27			
3				28			
4				29			
5				30			
6				31			
7				32			
8				33			
9				34			
10				35			
11				36			
12				37			
13				38			
14				39			
15				40			
16				41			
17				42			
18				43			
19				44			
20				45			
21				46			
22				47			
23				48			
24				49			
25				50			

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
 Print Name _____ Signature _____ Emp # _____

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227/466

RADIOLOGICAL SAFETY
Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3265</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.0 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.01%</u>
MDA <u>11.5 dpm</u>	MDA <u>8.2 cpm</u>	MDA <u>12.9 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>BC-833</u>	Serial # <u>BC-872</u>	Serial # <u>N/A</u>
Cal Due <u>7-14-06</u>	Cal Due <u>4-12-00</u>	Cal Due <u></u>
Bkg <u>46 cpm</u>	Bkg <u>48 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>1045 dpm</u>	MDA <u>1065 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location Room 240 (L)
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 2-17-00 Time 1300

RCT _____
 Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Unbiased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	< 2	0	20	5	16	F	0	16	34
2	< 2	0	-8	24	17	F	3	24	10
3	< 2	0	-12	19	18	F	0	-20	0
4	< 2	3	-8	24	19	F	0	12	24
5	< 2	0	-24	43	20	F	9	-16	38
6	< 2	0	4	24	21	F	0	-20	24
7	F	0	-24	19	22	F	0	72	15
8	F	0	-8	5	23	F	0	0	19
9	F	0	20	10	24	F	0	56	34
10	F	0	40	29	25	F	6	0	5
11	F	3	12	29	26	F	3	-20	24
12	F	0	8	24	27	F	0	-20	24
13	F	0	-8	24	28	F	3	-12	43
14	F	0	40	15	29	F	0	0	38
15	F	0	52	15	30	F	0	-8	52

Date Reviewed: 2 23 00 RS Supervision: _____

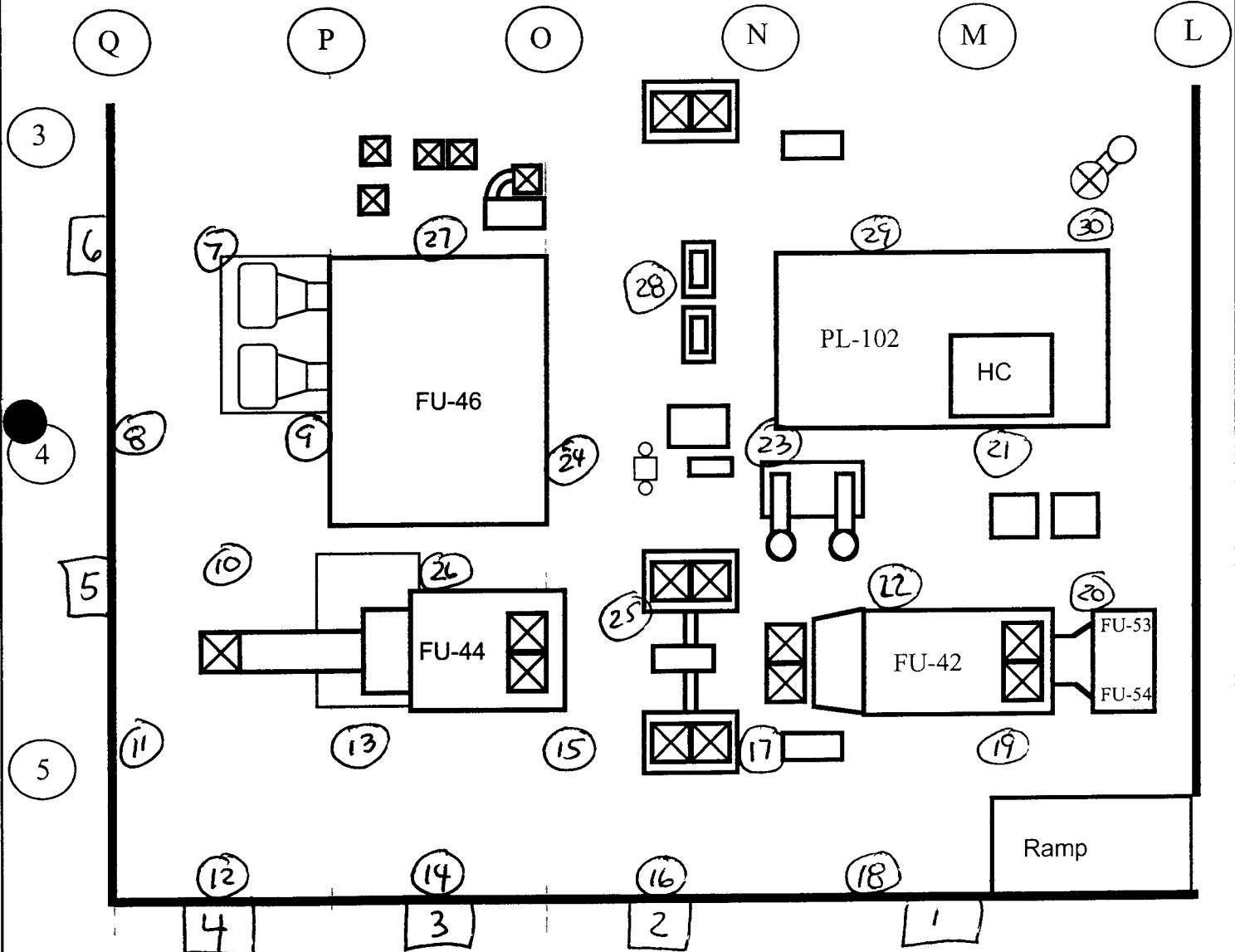
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGIC (SAFETY)

Drawing Showing Survey Points

RM 240(L)

N ↑



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.4 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>26.63%</u>
MDA <u>14.8 dpm</u>	MDA <u>115 dpm</u>	MDA <u>13.1 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>BC833</u>	Serial # <u>BC-872</u>	Serial # <u></u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>N/A</u>
Bkg <u>44 cpm</u>	Bkg <u>46 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>1024 dpm</u>	MDA <u>1045 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location Room 240 (L)
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 2-18-00 Time 0850

RCT Print name / Signature / Emp #

Comments Ceiling / Walls > 2 meters Biased survey points

1 minute pats and swipes See map for locations

Electra used on 2-17-00

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	<u>SP-10 > 2</u>	0	40	15	16	C	3	-12	48
2	<u>> 2</u>	0	-8	15	17	C	3	-8	34
3	<u>> 2</u>	0	12	15	18	C	0	-4	10
4	<u>> 2</u>	0	-40	29	19	C	0	-56	15
5	<u>> 2</u>	0	-8	24	20	C	0	-4	49
6	<u>> 2</u>	0	8	19	21	C	0	8	34
7	<u>> 2</u>	3	-4	29	22	C	0	-32	24
8	<u>> 2</u>	0	-8	24	23	C	0	4	10
9	<u>> 2</u>	3	4	29	24	C	0	-12	34
10	<u>> 2</u>	3	4	19	25	C	3	-16	15
11	C	0	-24	24	26	C	0	-28	24
12	C	0	16	15	27	C	0	-8	34
13	C	15	36	15	28	C	0	-12	24
14	C	0	24	39	29	C	0	4	0
15	C	0	4	29	30	C	0	20	29

Date Reviewed 2 23 00 RS Supervision

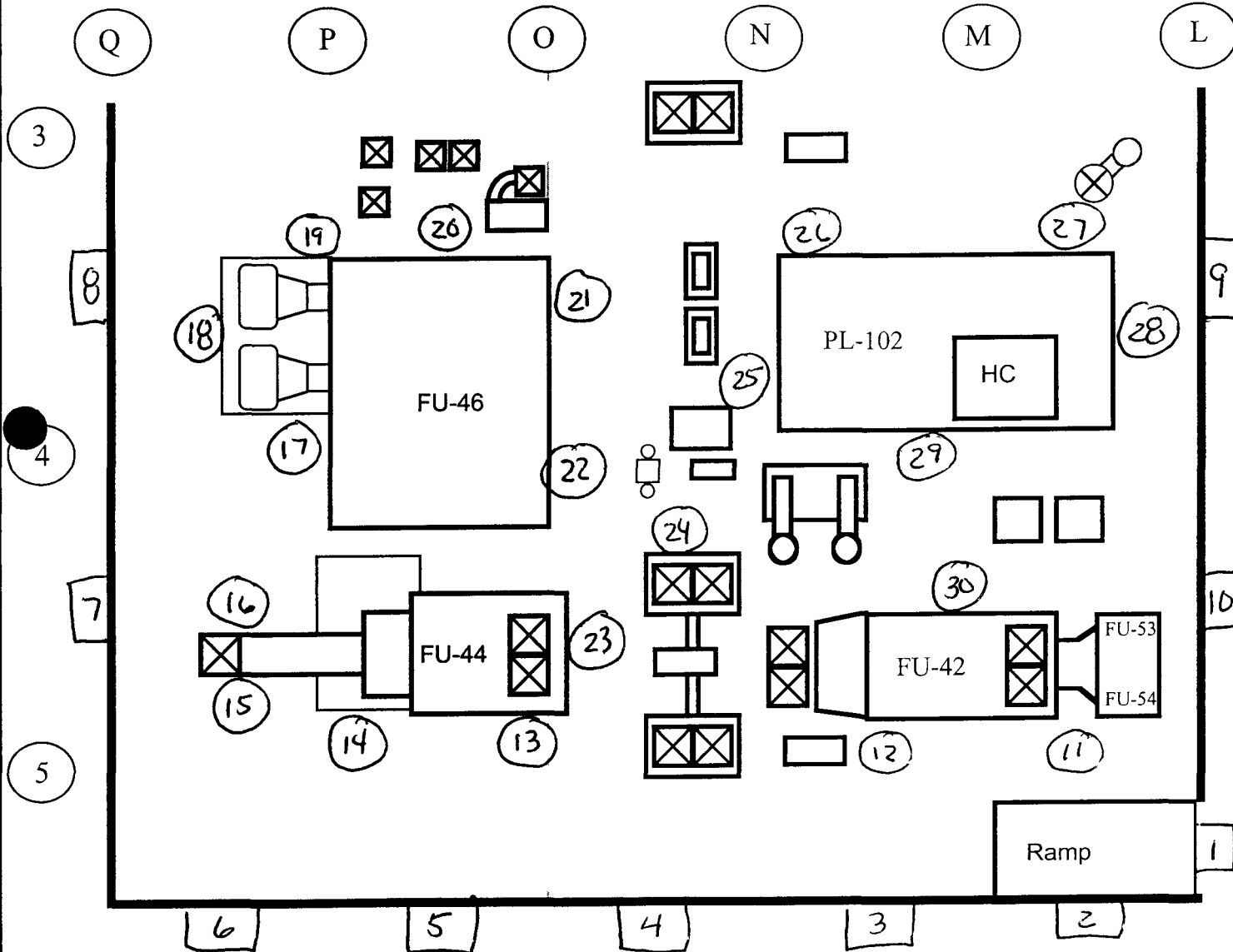
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL

Drawing Showing Survey Points

RM 240(L)

N ↑



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA****Survey Type Contamination**

Building 707
 Location Room 240 (2-18-00) (L)
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 2-18-00 Time 1200

RCT _____
 Print name / Signature / Emp #

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.4 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.63%</u>
MDA <u>14.8 dpm</u>	MDA <u>11.5 dpm</u>	MDA <u>13.1 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg _____
Model <u>BC-4</u>	Model <u>BC-4</u>	Model _____
Serial # <u>BC-833</u>	Serial # <u>BC-872</u>	Serial # <u>NA</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due _____
Bkg <u>44 cpm</u>	Bkg <u>46 cpm</u>	Bkg _____
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency _____
MDA <u>102.4 dpm</u>	MDA <u>104.5 dpm</u>	MDA _____

Comments Floor / Walls < 2 meters Biased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F- Duct	3	12	15	16	F- P-trap	0	16	39
2	F- ^{SAC 2-18-00} P-trap Filter	0	0	34	17	F- Fu-53	3	8	15
3	F- P-trap	0	4	10	18	F- Fu-54	6	24	15
4	F- FAN	0	32	10	19	F- FAN	0	48	5
5	F- FAN	0	48	15	20	F- Drain	0	44	44
6	F- Door Fu-46	0	12	10	21	F- FAN	3	0	5
7	F- Door Fu-46	0	48	29	22	F- Drain	0	8	19
8	F- Door Fu-46	0	24	0	23	F- Pump	0	20	29
9	F- Pump ^{SAC 2-18-00} PL-102	0	4	24	24	F- Tank	3	4	19
10	F- Door PL-102	3	4	34	25	F- Door Fu-44	3	40	0
11	F- Door PL-102	3	-24	24	26	END OF SURVEY			
12	F- Door PL-102	3	-4	34	27				
13	F- Door PL-102	0	-20	53	28				
14	F- Pipe	9	-12	19	29				
15	F- Door PL-102	0	-8	19	30				

Date Reviewed. 22300 RS Supervision

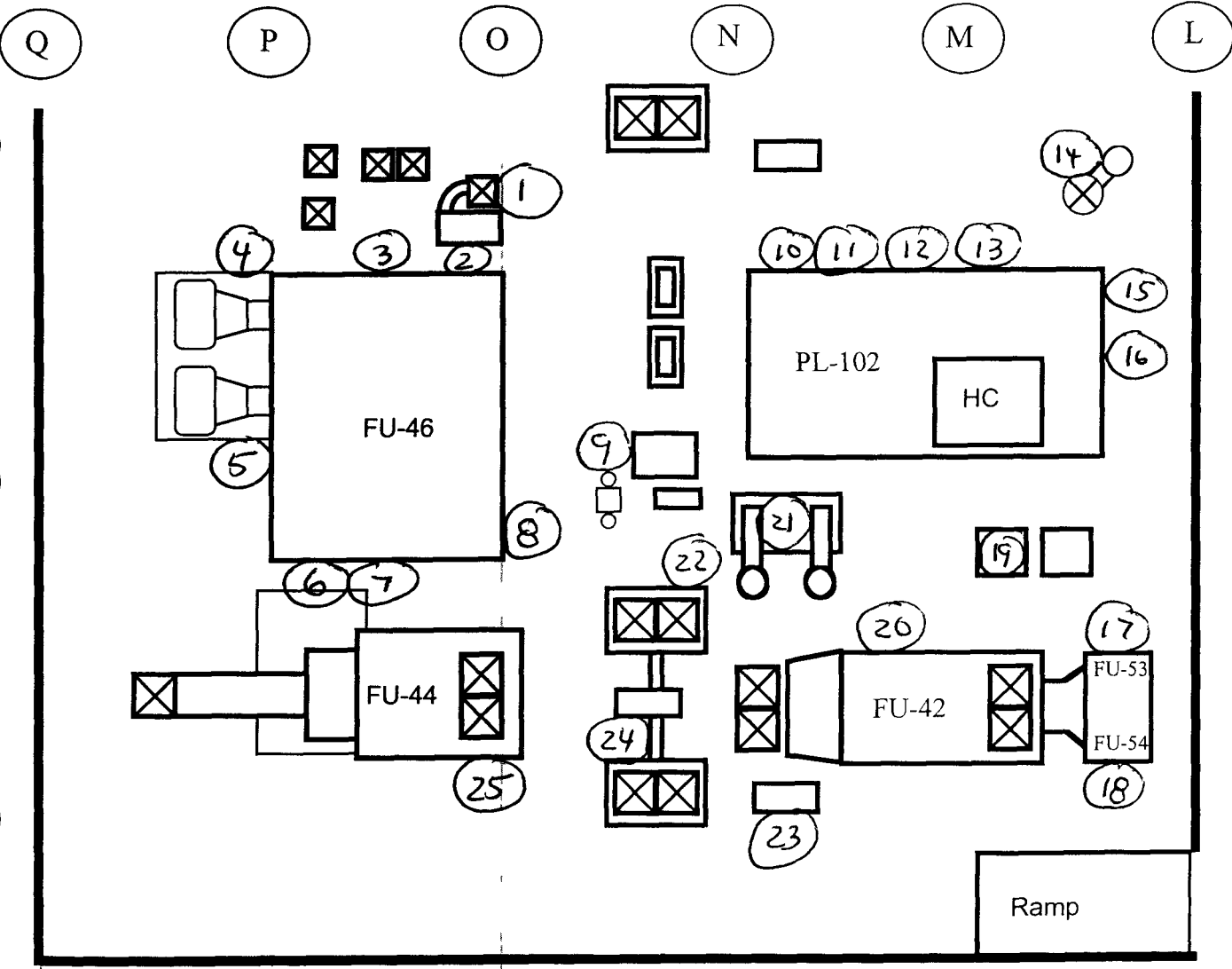
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGIC

Drawing Showing Survey Points

RM 240(L)

N ↑



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg	Eberline	Mfg	Eberline	Mfg	NeTech
Model	Sac-4	Model	Sac-4	Model	Electra
Serial #	849	Serial #	837	Serial #	1518
Cal Due	4-10-00	Cal Due	5-17-00	Cal Due	6-29-00
Bkg	0.2 cpm	Bkg	0.3 cpm	Bkg	2.0 cpm
Efficiency	33%	Efficiency	33%	Efficiency	20.26%
MDA	12.9 dpm	MDA	13.9 dpm	MDA	42.5 dpm
Mfg	Eberline	Mfg	Eberline	Mfg	NE TECH
Model	BC-4	Model	BC-4	Model	ELECTRA
Serial #	833	Serial #	872	Serial #	1233
Cal Due	1-14-00	Cal Due	4-12-00	Cal Due	5-1-00
Bkg	4.0 cpm	Bkg	4.8 cpm	Bkg	4.0 cpm
Efficiency	25%	Efficiency	25%	Efficiency	20.63%
MDA	98.1 dpm	MDA	106.5 dpm	MDA	58.2 dpm

Survey Type **Contamination**
 Building **707**
 Location **Room 240**
 Purpose **Reconnaissance Level Characterization**

RWP # **JO-707-1204**Date **2-21-00** Time **1100**RCT **R. EBER**
Print name

Signature

RCT **HERSEY**
Print name

Signature

Comments **Equipment Biased survey points**

1 minute pats and swipes See map for locations

NOTE (15) 10,000 REMV PIPE (3 AREAS)
 20,000 FIXED 2,000 REV/40,000
 Note (15) contamination taken off of current label 50,000 FIXED/100,000
 on pipe - Surveyed previously (alpha only) units in dpm/100cm²

SURVEY RESULTS

Remv = Removable Fixed = + x rev

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	DOOR	3	20	27	16	DUCT	0	-8	18
2	FU54	0	16	37	17	PC102 (TOP)	0	-4	18
3	DOOR FU53/54	0	8	14	18	PC102 (TOP)	0	16	50
4	DUCT FU42	0	4	18	19	DUCT	0	-4	23
5	MOTOR	0	80	18	20	DOOR	0	4	23
6	DOOR PC102	0	-4	18	21	MOTOR	0	-24	23
7	DOOR PC102	6	40	69	22	DOOR (FU-44)	0	-44	18
8	PC102 TOP	3	-20	14	23	DUCT (FU44)	0	36	27
9	PC102 TOP DUCT	0	48	95	24	DOOR (FU46)	0	24	14
10	PC102 TOP/DOOR	0	24	37	25	FU46	3	-12	55
11	DOOR	0	-4	23	26	DOOR (FU46)	3	8	9
12	DOOR	0	-36	27	27	FU48	0	-16	18
13	DOOR	0	-4	23	28	DUCT	0	32	5
14	DOOR	0	-16	27	29	DUCT	3	48	27
15	PIPE (CONTAINED CONTAMINATION) SEE NOTE-B				30	MOTOR (FU46)	0	-4	32

Date Reviewed **2-25-00** RS Supervision

Print Name

Signature

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGIC SURVEY

Drawing Showing Survey Points

Pipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	↑ 72	0	4	46	61				
32	12 12 23-00	0	24	55	62				
33		0	-28	27	63				
34	PLEDMN(TOP) FU46 72	0	28	18	64				
35	DUCT 72	0	4	24	65				
36	DUCT 72	0	-32	67	66				
37	DUCT 72	3	-8	24	67				
38	FU-54 DUCT 72	0	64	44	68				
39	DUCT	0	-20	58	69				
40	PIPE-72	0	20	24	70				
41	PIPE 72	3	52	34	71				
42	PIPE 72	0	40	29	72				
43	DUCT 72	0	-16	24	73				
44	DUCT 72	0	-36	10	74				
45	DUCT FU46 72	0	24	48	75				
46	END OF SURVEY				76	N/A			
47					77				
48					75				
49					79				
50					80				
51					81				
52					82				
53	N/A				83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

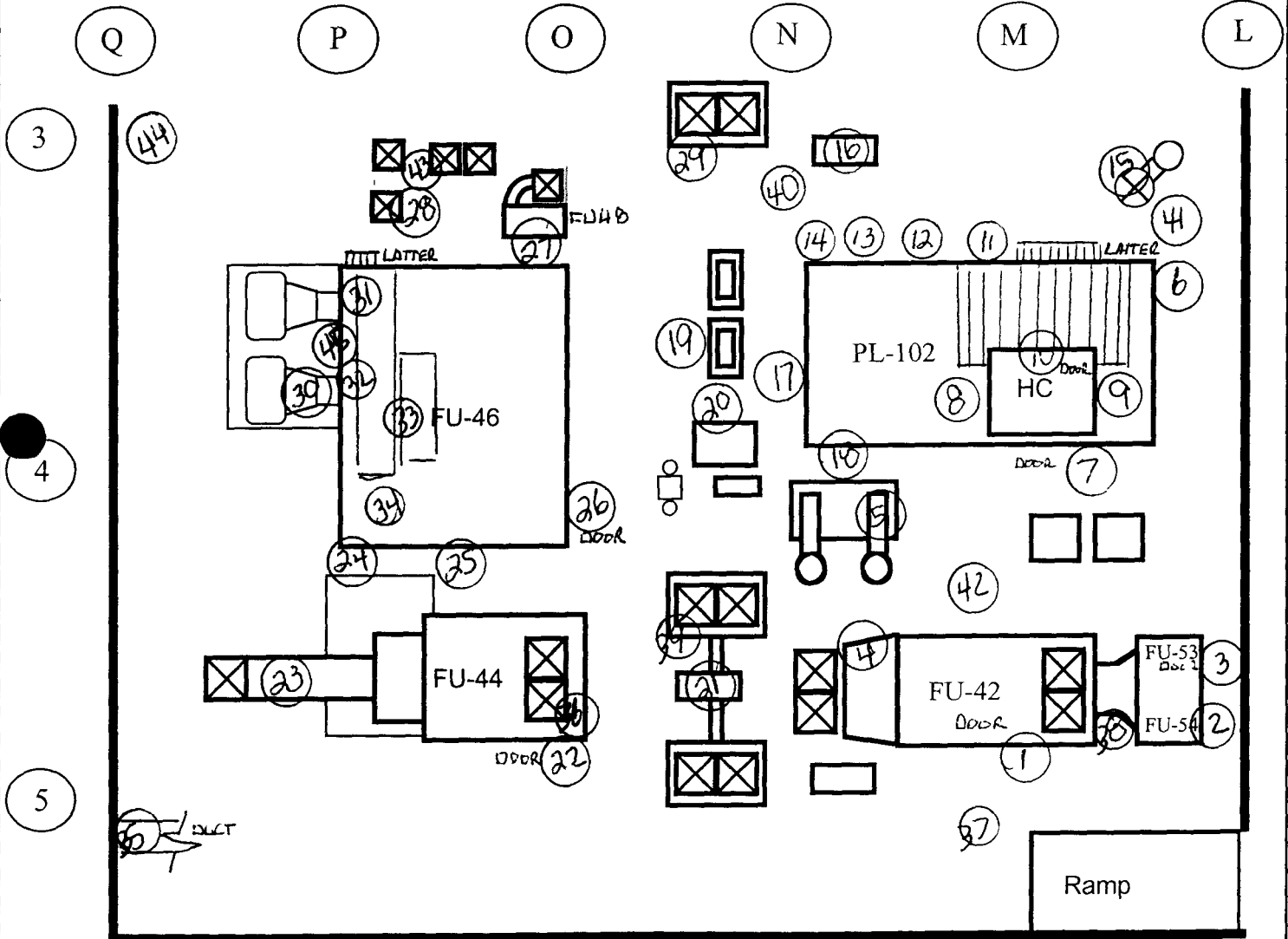
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGIC

Drawing Showing Survey Points

RM 240(L)

N ↑



Bob,

First off, DO NOT sign where the little arrow¹³ stuck on package – that is for Eric

The following is regarding survey area "L" survey point #15 for equipment

1) Are the values for removable and contamination in units of dpm or cpm? (They should be specified in comments where note is written)?

Removable + fixed - Corrected comments

2) I am assuming that the values given for point #15 were not obtained from the instruments used for the rest of the surveys but were read off of the posted information (from a different instrument at a different time), correct?

yes

3) This area is posted as a contamination area, correct? And, it was posted prior to us doing RLC surveys, right?

RBA - Contained area in HCA - was posted prior

4) Are the fixed values for alpha or beta or alpha+beta???

- Just Alpha - put in comments

Please page 212-3244 if we need to discuss THANKS!

-James

Also – please forward to Eric McKamey Eric will need to initial the change where the survey data ^{was added} and then give back to you (Bob) for your part of the V&V process

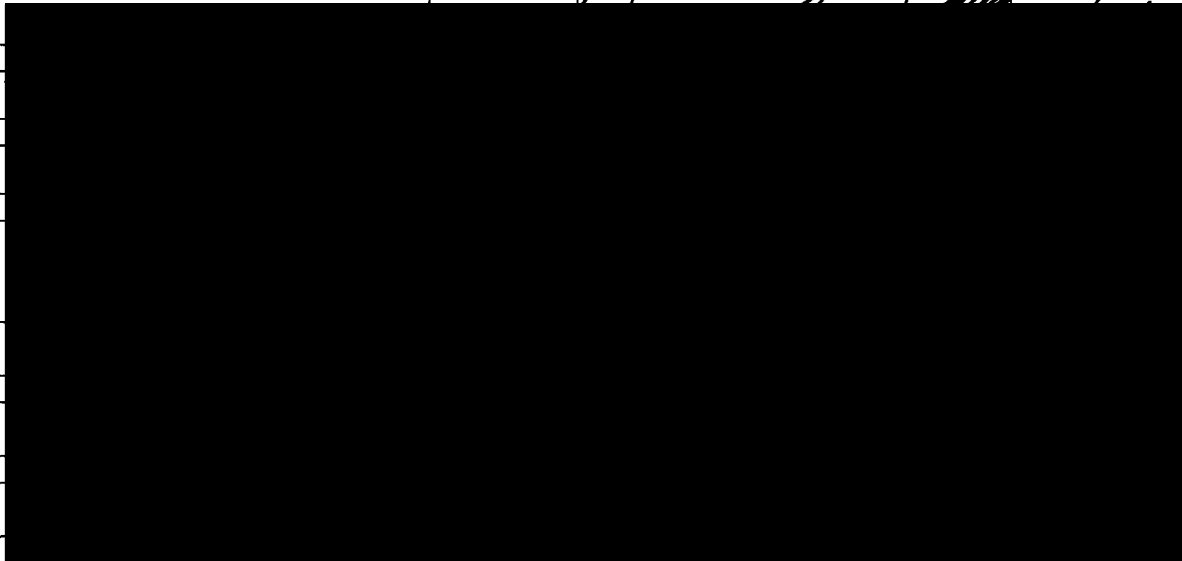
Also note that these ARE ORIG. copies of pkg & DATA

[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area M		Survey Unit N/A		Area (m ²) 634	
Survey Unit Description INSIDE OF MODULE A (ROOM 100) EXCLUDING ISOPRESS ROOM Building 707 radiological areas are posted as fixed contamination areas					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
45	47	40	4	0	62
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707
Survey Area: M	Survey Unit: N/A
Survey Unit Description: Inside of Module A (Room 100) excluding isopress room BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation: 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707
Survey Area: M		Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE A (ROOM 100) EXCLUDING ISOPRESS ROOM BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>45 <u>unbiased</u> survey points uniformly distributed throughout room</p> <p>17 <u>biased</u> survey points at the following locations</p> <ul style="list-style-type: none"> - 3 points adjacent to <u>each</u> stokes pump - 3 points around floor near GB A-15 - 2 points near c-cell 530 - 2 points near criticality drain locations - 2 points near entrance to isopress room - 2 points near Soft Sided Containment near GB A-20/A-30 <p>CEILINGS/WALLS > 2 meters</p> <p>30 <u>biased</u> surveys (divided evenly between wall and ceiling where possible) with focus on following areas</p> <ul style="list-style-type: none"> - Walls behind process lines - Ceilings above GB's - Ceilings/walls adjacent to c-cells/tents - Stained or discolored areas - Walls/ceilings near GB's mounted high on walls - Areas around pipe or other penetrations <p>EQUIPMENT</p> <p>40 <u>biased</u> survey points on equipment with one or more samples from</p> <ul style="list-style-type: none"> - Each GB "section" extending from the main (center) GB line - Equipment in the vicinity of the stokes pumps - Gloveboxes which have visible leaks or contained spills beneath them - 2 surveys at 2 different room exhaust ducts - Bag-in/bag out ports to GB lines - 5 survey points on top of overhead piping (where locations are accessible through 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707
Survey Area: M		Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE A (ROOM 100) EXCLUDING ISOPRESS ROOM BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 62 1 m ² surface scans shall be taken at each location identified for surface activity measurements Locations above the DCGL are to be documented CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 4 biased (paint) media samples taken as follows <ul style="list-style-type: none"> - 1 sample near one of the entrances to the module - 1 sample near the HCA around one of the stokes pumps - 1 sample beneath GB A-15 (EU decon GB) - 1 sample near a criticality drain 	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Page superseded 01/18/00 JF Chg #2

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: M	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE A (ROOM 100) EXCLUDING ISOPRESS ROOM BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: M	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE A (ROOM 100) EXCLUDING ISOPRESS ROOM BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

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Page Superseded 01/18/00 JF Chg #2-3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area M	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE A (ROOM 100) EXCLUDING ISOPRESS ROOM BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: M	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE A (ROOM 100) EXCLUDING ISOPRESS ROOM BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 707	
Survey Area: M		Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys		1	db
Total Activity Surveys		1	db
Exposure Rate Surveys		NA	NA
Removable Surveys		1	db
Media Samples		228	EDM
Volumetric Samples		NA	NA
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys		1	db
Total Activity Surveys		1	db
Exposure Rate Surveys		NA	NA
Removable Surveys		1	db
Media Samples		228	EDM
Volumetric Samples		NA	NA
Comments			

NATIONAL TECHNOLOGY SURVEY

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____
Model _____	Model _____	Model _____	Building _____
Serial # _____	Serial # _____	Serial # _____	Location* _____
Cal Due _____	Cal Due _____	Cal Due _____	Purpose _____
Bkg _____	Bkg. _____	Bkg _____	RWP # _____
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____
			Print name Signature Emp #
Mfg. _____	Mfg _____	Mfg _____	RCT _____ / _____ / _____
Model _____	Model _____	Model _____	Print name Signature Emp #
Serial # _____	Serial # _____	Serial # _____	
Cal Due _____	Cal Due _____	Cal Due _____	
Bkg _____	Bkg. _____	Bkg _____	
Efficiency _____	Efficiency _____	Efficiency _____	
MDA _____	MDA _____	MDA _____	

PRL #: _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1 _____	_____	_____	_____	26 _____	_____	_____	_____
2 _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33 _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

Date Reviewed: _____

RS Supervision: _____

Print Name

Signature

Emp #

283

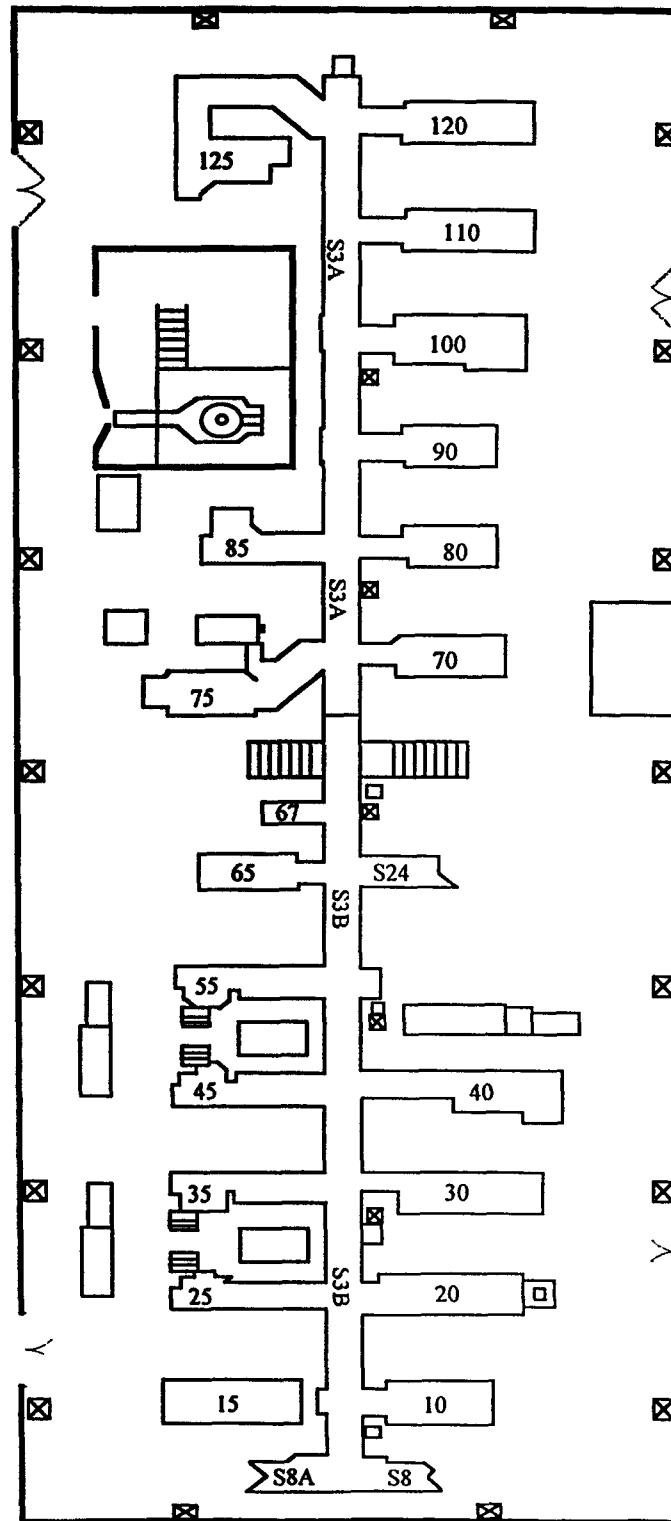
236 / 466

RADIOLOGICAL SAFETY

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE A



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3126</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>4-26-00</u>
Bkg <u>0.5 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.09%</u>
MDA <u>15.6 dpm</u>	MDA <u>11.5 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NE Tech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>1389</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>4.8 cpm</u>	Bkg <u>5.2 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>20.71%</u>
MDA <u>106.5 dpm</u>	MDA <u>110.7 dpm</u>	MDA <u>94 dpm</u>

Survey Type Contamination

Building 707
 Location Module A Survey Area M
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 3-2-00 Time 1600

Comments Floor / Walls < 2 meters Unbiased survey points
1 m² scans, 1 minute pats and swipes See map for locations
3 bkgd counts alpha electra ~8cpm (0,0,1)

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F	3	4	18	16	F	0	0	138
2	F	0	28	6	17	F	6	76	54
3	F	3	52	18	18	F	3	16	78
4	F	3	44	2400	19	F	3	20	90
5	F	0	20	60	20	F	0	28	222
6	F	9	36	24	21	F	9	-12	210
7	F	0	36	168	22	F	0	-4	420
8	F	0	4	42	23	F	0	44	30
9	F	3	12	54	24	F	0	-8	60
10	F	0	48	72	25	F	0	-32	42
11	F	3	4	288	26	F	6	-48	66
12	F	0	0	180	27	Under Glove Box by Crit dnm	279	-16	3456
13	F	6	-36	48	28	F	0	-16	30
14	F	3	-36	42	29	F	0	-24	3540
15	F	0	8	444	30	F	3	-72	90

Date Reviewed: 3-16-00 RS Supervision

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

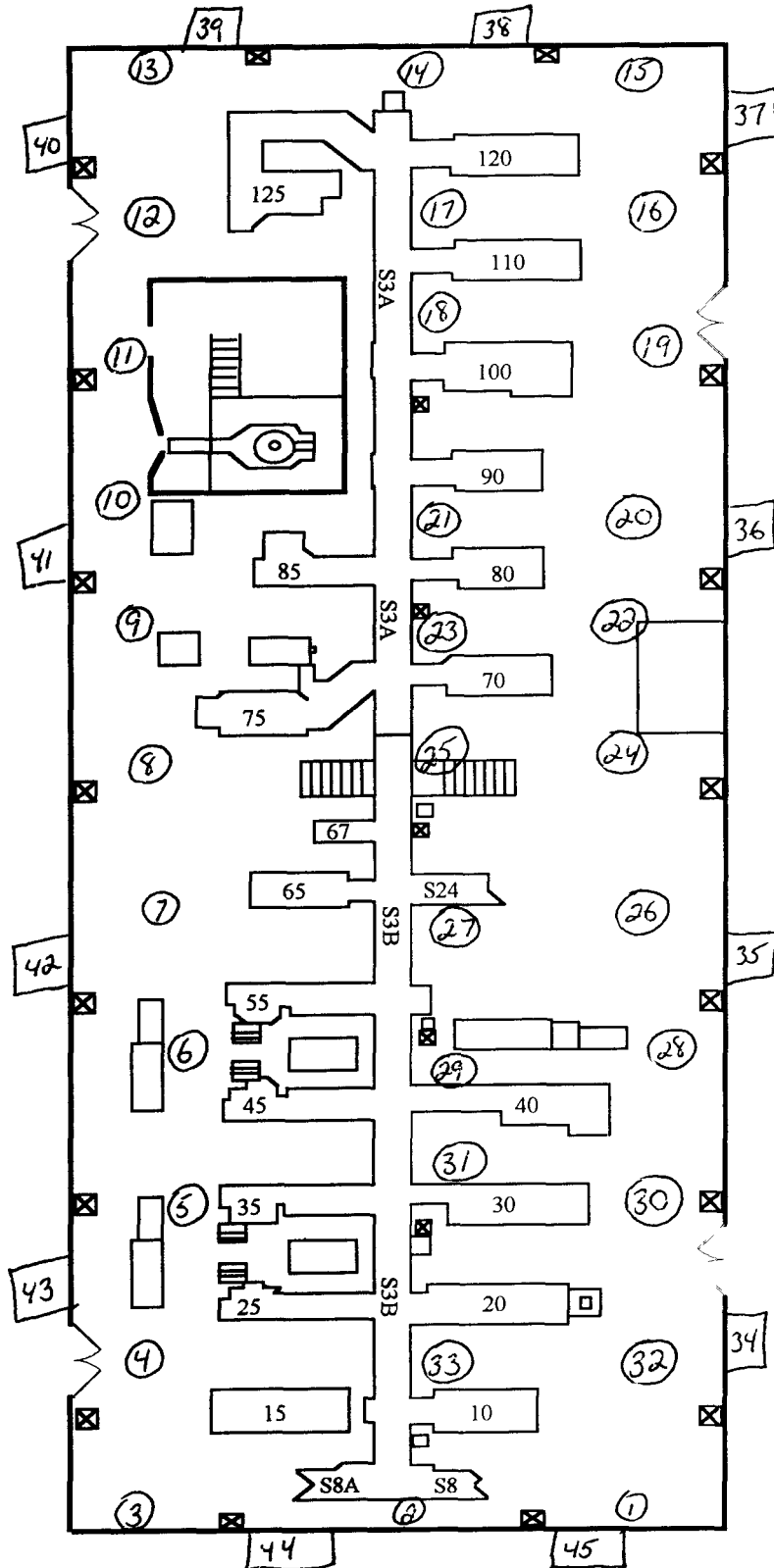
Point #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	F	0	44	30	61				
32	F	0	-4	60	62				
33	F	3	0	246	63				
34	W	0	66	24	64				
35	W	3	-36	18	65				
36	W	3	-48	12	66				
37	W	3	-52	18	67				
38	W	12	40	1080	68				
39	W	0	-20	24	69				
40	W	42	32	30	70				
41	W	0	-28	18	71				
42	W	0	-12	18	72				
43	W	3	-40	12	73				
44	W	3	-20	6	74				
45	W	0	-12	30	75				
46	End of survey				76				
47					77				
48					78				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE A



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1245</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>22.36%</u>
MDA <u>11.5 dpm</u>	MDA <u>12.9 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NE Tech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>1389</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>49 cpm</u>	Bkg <u>51 cpm</u>	Bkg <u>10 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>20.11%</u>
MDA <u>107.5 dpm</u>	MDA <u>109.4 dpm</u>	MDA <u>94 dpm</u>

Survey Type Contamination

Building 707
 Location module A Survey Area 1A
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 2-29-00 Time 1500Print name / / Signature / Emp # /Comments Floor / Walls < 2 meters Biased survey points1 m² scans, 1 minute pats and swipes See map for locations3 bkgd counts alpha electra < 8cpm (1,2,3)**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F	0	-4	30	16	F	3	0	192
2	F	3	40	18	17	F	0	0	30
3	F	3	36	36	18	END OF SURVEY			
4	F	6	-52	168	19				
5	F	0	-8	54	20				
6	F	0	-20	48	21				
7	F	3	-32	60	22				
8	F	0	0	48	23				
9	F	0	-8	36	24	N/A			
10	F	0	8	102	25				
11	F	3	8	762	26				
12	F	3	-28	498	27				
13	F	0	0	54	28				
14	F	0	-28	12	29				
15	F	0	-28	30	30				

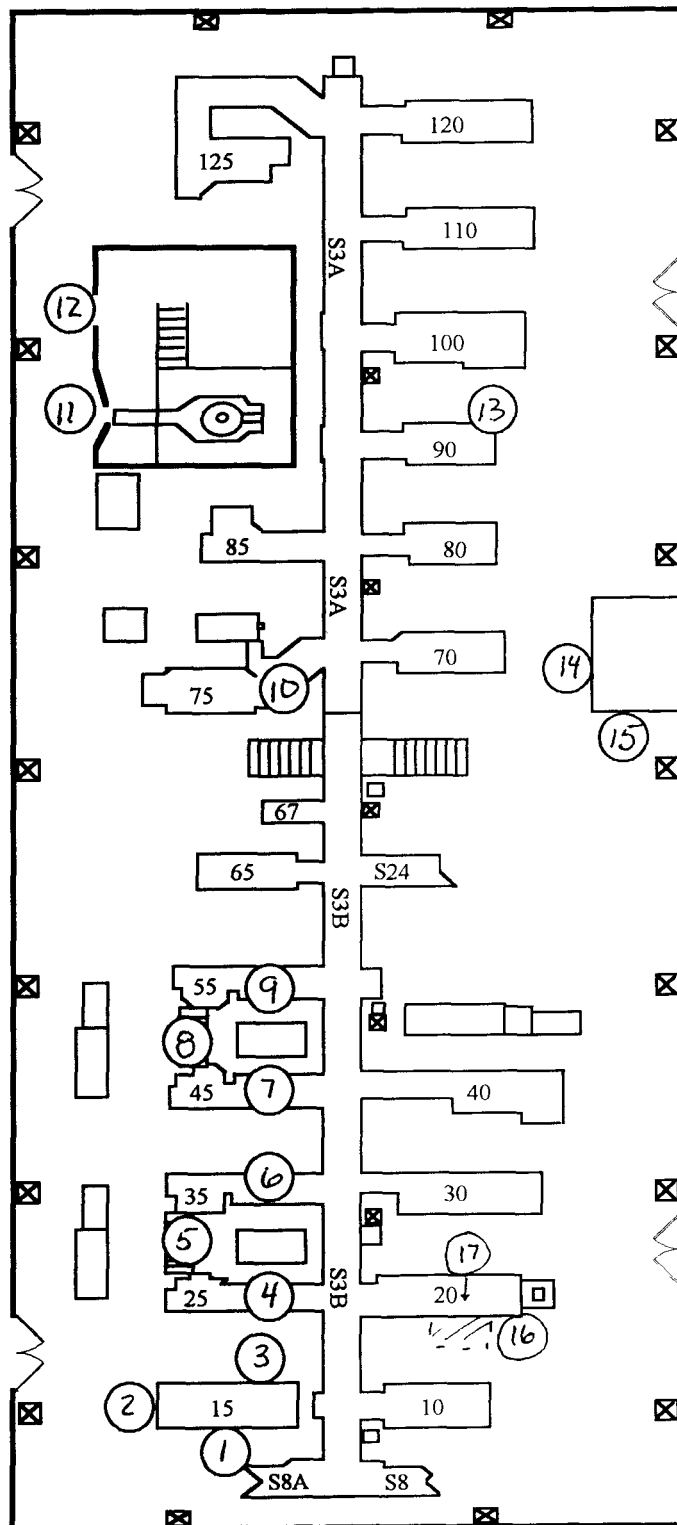
Date Reviewed: 3 16 00 RS Supervisor [REDACTED]

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE A



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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # 837	Serial # 3120
Cal Due 4-10-00	Cal Due 5-17-00	Cal Due 4-26-00
Bkg 0.2 cpm	Bkg 0.1 cpm	Bkg 3.0 cpm
Efficiency 33%	Efficiency 33%	Efficiency 12109
MDA 12.9 dpm	MDA 11.5 dpm	MDA 94 dpm
Mfg Eberline	Mfg Eberline	Mfg NE Tech
Model BC-4	Model BC-4	Model Electra
Serial # 872	Serial # 833	Serial # 1246
Cal Due 4-12-00	Cal Due 7-14-00	Cal Due 7-24-00
Bkg 5.2 cpm	Bkg 5.1 cpm	Bkg 0.0 cpm
Efficiency 25%	Efficiency 25%	Efficiency 12174
MDA 110.4 dpm	MDA 109.4 dpm	MDA 94 dpm

Survey Type Contamination

Building 707
 Location Module A Survey Area M
 Purpose Reconnaissance Level Characterization

RWP # CC 707 1204Date 3/13/3/12 00 Time DaysComments Equipment Biased survey points

1 minute pats and swipes See map for locations BA(60) < 5 cpm circa 3ets both days
alpha (1,1,3) 3/12/00, (1,2,2) 3/13/00

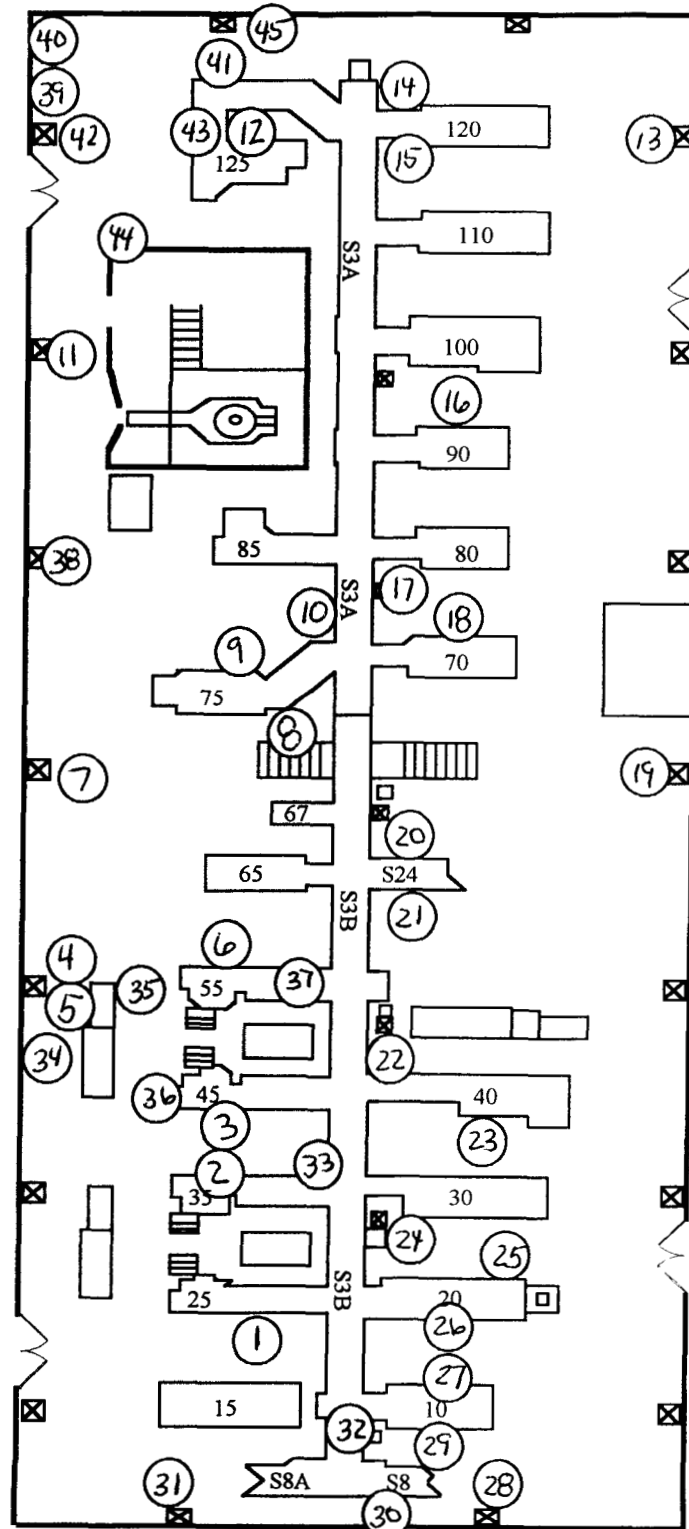
SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	GB-25 Control under ^{Point} 5	0	4	408	16	GB 40 Crit Drain	3	56	702
2	GB-35 Control under ^{Point} 007	6	-20	738	17	Air Vent #30	9	32	108
3	GB-45 Control under ^{Point} 007	0	12	492	18	GB-70 Port 0014	3	4	36
4	Air Vent #6	6	-44	264	19	Air Vent #32	6	8	150
5	Platform Ladder Top step	6	-28	672	20	CNVYR S-24 Crit Drain	3	8	102
6	GB-55 Control under ^{Point} 0007	3	-12	288	21	CNVYR S-2 Port 41	1812	56	1342
7	Air Vent #12	6	12	282	22	CNVYR S-8	0	0	1038
8	GB-75 Crit Drain	3	-12	288	23	GB 20 Port 0005	3	10	48
9	GB-75 Seam at Port A330	0	32	17310	24	Air Vent #38	36	28	438
10	GB-75 CNVYR	0	14	282	25	GB 20 Enc 9 Port 0015	0	24	1314
11	Air Vent #16	3	8	162	26	GB 20	0	44	48
12	GB-125 Seam at Port 0040	0	-8	726	27	GB 10 Port 0011	0	10	294
13	Air Vent #23	12	-32	300	28	Air Vent #42	9	36	174
14	CNVYR S-3A Crit Drain	3	16	102	29	GB 10 Port 0003	0	16	30
15	GB-120 Flange under ^{Point} 0021	33	-32	2232	30	CNVYR S-8 Crit Drain	60	24	72

Date Reviewed 3-16-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

MODULE A

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>E37</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.4 cpm</u>	Bkg <u>0.6 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>2063</u>
MDA <u>14.8 dpm</u>	MDA <u>14.3 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NE Tech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>1518</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>53 cpm</u>	Bkg <u>51 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>2186</u>
MDA <u>111.3 dpm</u>	MDA <u>169.4</u>	MDA <u>94 dpm</u>

Survey Type Contamination

Building 707
 Location Module A Survey Area M
 Purpose Reconnaissance Level Characterization

RWP # CC 707 1809Date 3/13/00 Time 1435Comments Ceiling / Walls > 2 meters Biased survey points1 minute pats and swipes See map for locations36Kcpd counts alpha electra < 8cpm (2,2,3)**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	<u>W 22m</u>	<u>3</u>	<u>44</u>	<u>24</u>	16	<u>W 22m</u>	<u>0</u>	<u>12</u>	<u>42</u>
2	<u>" "</u>	<u>0</u>	<u>-8</u>	<u>18</u>	17	<u>" "</u>	<u>12</u>	<u>-12</u>	<u>42</u>
3	<u>" "</u>	<u>0</u>	<u>28</u>	<u>24</u>	18	<u>" "</u>	<u>3</u>	<u>-32</u>	<u>24</u>
4	<u>" "</u>	<u>0</u>	<u>-12</u>	<u>54</u>	19	<u>" "</u>	<u>0</u>	<u>128</u>	<u>18</u>
5	<u>" "</u>	<u>0</u>	<u>-8</u>	<u>54</u>	20	<u>" "</u>	<u>0</u>	<u>92</u>	<u>6</u>
6	<u>" "</u>	<u>6</u>	<u>20</u>	<u>36</u>	21	<u>Ceiling</u>	<u>0</u>	<u>200</u>	<u>18</u>
7	<u>" "</u>	<u>3</u>	<u>-8</u>	<u>36</u>	22	<u>" "</u>	<u>0</u>	<u>216</u>	<u>18</u>
8	<u>" "</u>	<u>0</u>	<u>-24</u>	<u>12</u>	23	<u>" "</u>	<u>0</u>	<u>272</u>	<u>36</u>
9	<u>" "</u>	<u>3</u>	<u>-8</u>	<u>18</u>	24	<u>" "</u>	<u>0</u>	<u>232</u>	<u>36</u>
10	<u>" "</u>	<u>0</u>	<u>8</u>	<u>12</u>	25	<u>" "</u>	<u>6</u>	<u>192</u>	<u>30</u>
11	<u>" "</u>	<u>0</u>	<u>28</u>	<u>18</u>	26	<u>" "</u>	<u>0</u>	<u>212</u>	<u>6</u>
12	<u>" "</u>	<u>3</u>	<u>-28</u>	<u>12</u>	27	<u>" "</u>	<u>0</u>	<u>124</u>	<u>6</u>
13	<u>" "</u>	<u>0</u>	<u>-32</u>	<u>24</u>	28	<u>" "</u>	<u>0</u>	<u>144</u>	<u>12</u>
14	<u>" "</u>	<u>0</u>	<u>44</u>	<u>36</u>	29	<u>" "</u>	<u>3</u>	<u>8</u>	<u>36</u>
15	<u>" "</u>	<u>0</u>	<u>-4</u>	<u>36</u>	30	<u>" "</u>	<u>0</u>	<u>-8</u>	<u>18</u>

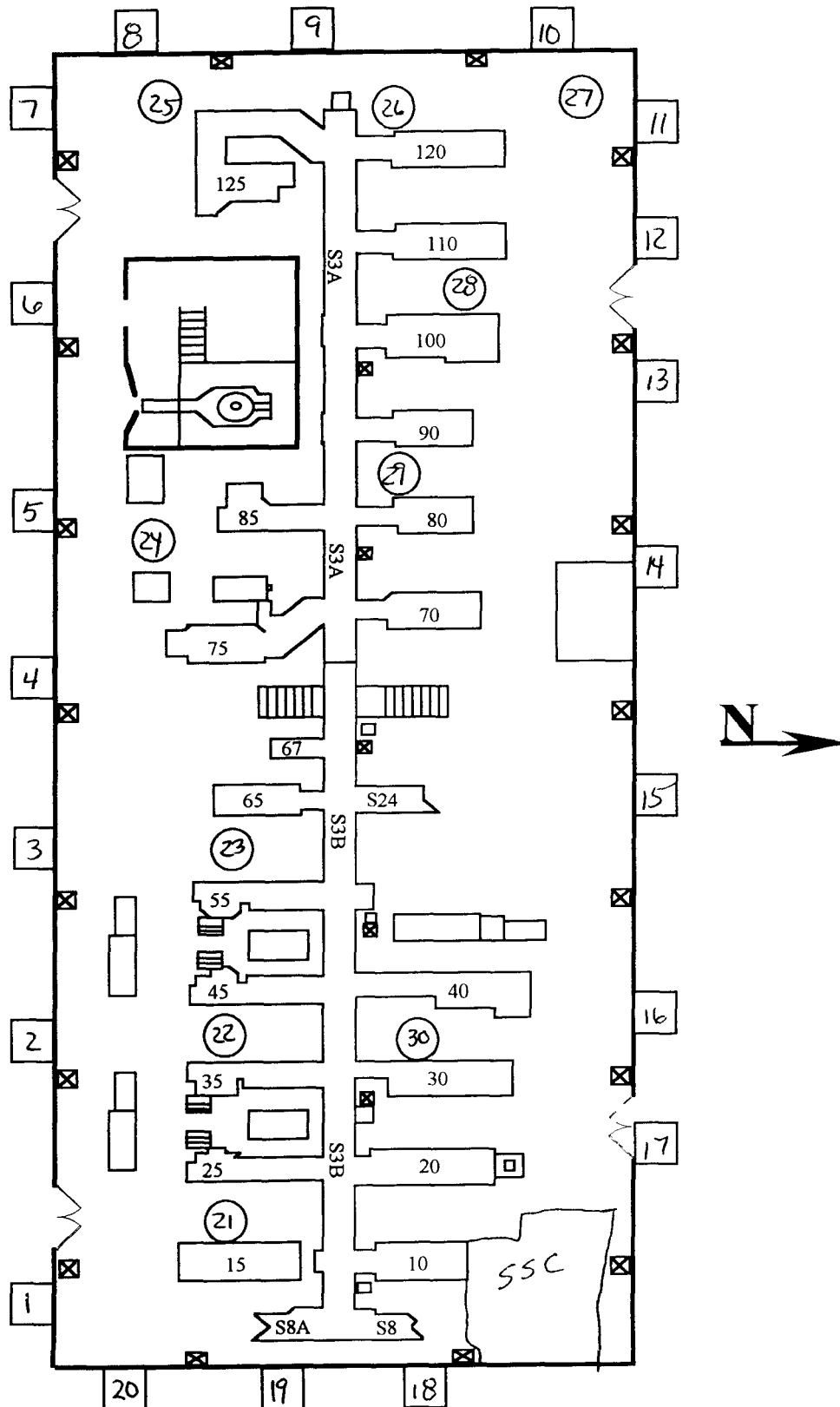
Date Reviewed: 3/16/00 RS Supervisor

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE A



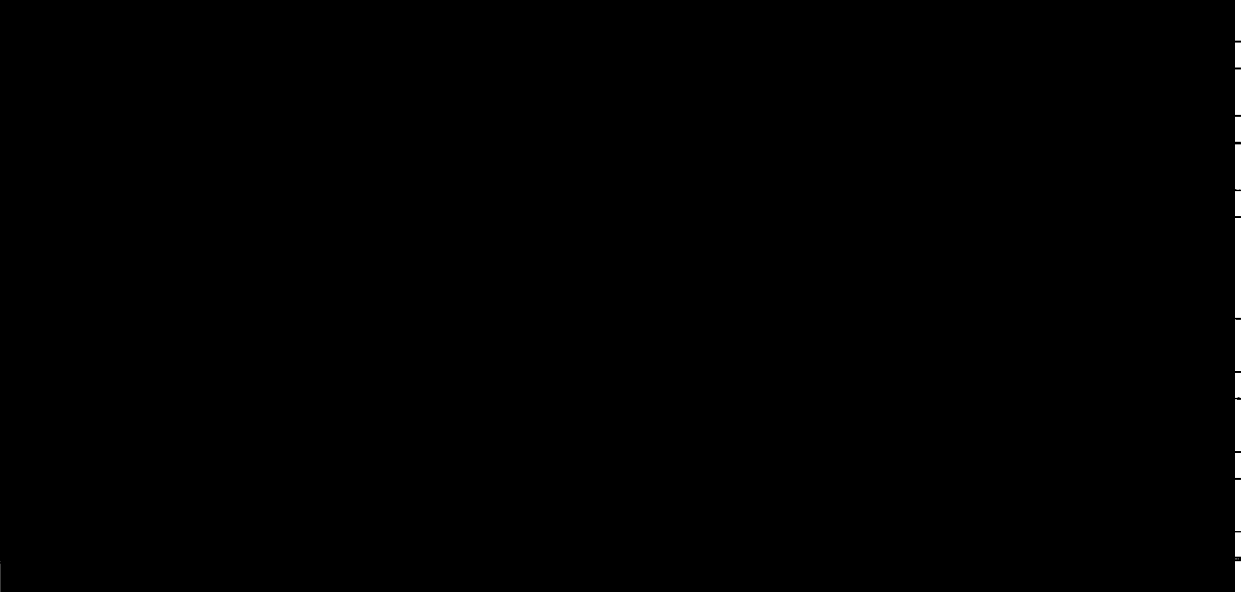
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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area N		Survey Unit N/A		Area (m ²) 634	
Survey Unit Description INSIDE OF MODULE B (ROOM 105) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS					
Survey Type			Classification		
RLC Survey X FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
45	44	45	4	0	59
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit.			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707
Survey Area: N	Survey Unit: N/A
Survey Unit Description: INSIDE OF MODULE B (ROOM 105) INSIDE OF MODULE B (ROOM 105) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation:	
	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707
Survey Area: N		Survey Unit: N/A
Survey Unit Description: INSIDE OF MODULE B (ROOM 105) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>45 <u>unbiased</u> survey points uniformly distributed throughout room</p> <p>14 <u>biased</u> survey points at the following locations</p> <ul style="list-style-type: none"> - 10 points around floors adjacent to contained contamination areas (where accessible) - 2 points near criticality drain locations - 2 points near entrance to temporary room near SE corner of room <p>CEILINGS/WALLS > 2 meters</p> <p>30 <u>biased</u> surveys (divided evenly between wall and ceiling when possible) with focus on following areas</p> <ul style="list-style-type: none"> - Walls behind process lines - Ceilings above GB's - Ceilings/walls adjacent to c-cells/tents - Stained or discolored areas - Walls/ceilings near GB's mounted high on walls - Areas around pipe or other penetrations <p>EQUIPMENT</p> <p>45 <u>biased</u> survey points on equipment with one or more samples from</p> <ul style="list-style-type: none"> - Each GB "section" extending from the main (center) GB lines - Gloveboxes which have visible leaks or contained spills beneath them - 2 surveys points at each of 5 room exhaust ducts - Bag-in/bag out ports to GB lines - 5 survey points on top of overhead piping (where locations are accessible through reach tools) 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building: 707
Survey Area: N		Survey Unit: N/A
Survey Unit Description: INSIDE OF MODULE B (ROOM 105) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 59 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 4 biased (paint) media samples taken as follows: <ul style="list-style-type: none"> - 1 sample near one of the entrances to the module - 1 sample around a posted HCA - 1 sample beneath GB 20 - 1 sample near a criticality drain 	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Pgr superseded 01/18/00 Jg Chg #2

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: N	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE B (ROOM 105) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media "</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: N	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE B (ROOM 105) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4. Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media "</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

Pg superseded 01/18/00 JH Chg # 3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: N	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE B (ROOM 105) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02. Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering. Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

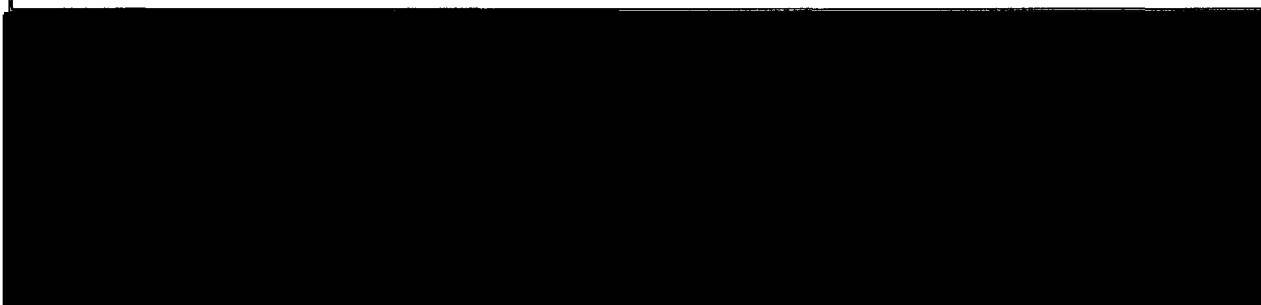
SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: N	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE B (ROOM 105) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 707	
Survey Area: N		Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys		1	db
Total Activity Surveys		1	db
Exposure Rate Surveys		NA	NA
Removable Surveys		1	db
Media Samples		225	KDM
Volumetric Samples		NA	NA
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys		1	db
Total Activity Surveys		1	db
Exposure Rate Surveys		NA	NA
Removable Surveys		1	db
Media Samples		225	KDM
Volumetric Samples		NA	NA
Comments			



INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg. _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____

Building: _____

Location* _____

Purpose _____

RWP # _____

Date _____ Time _____

RCT _____

Print name _____

Signature _____

Emp # _____

RCT _____

Print name _____

Signature _____

Emp # _____

PRL #: _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1 _____	_____	_____	_____	26 _____	_____	_____	_____
2 _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33 _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

Date Reviewed: _____

RS Supervision: _____

Print Name _____

Signature _____

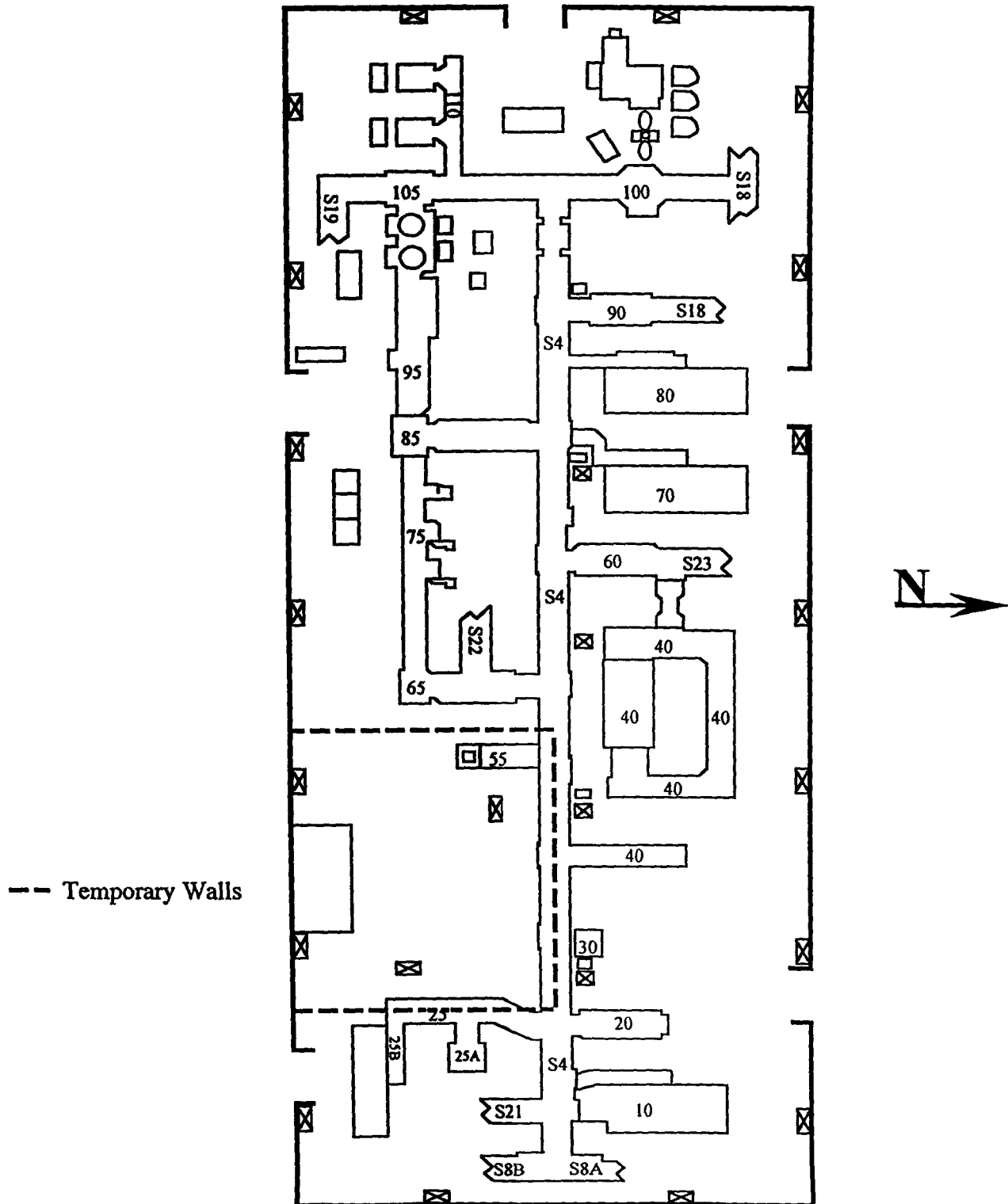
Emp # _____

ENVIRONMENTAL TECHNOLOGY UNIT

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE B



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # 837	Serial # 1245
Cal Due 4-10-00	Cal Due 5-17-00	Cal Due 7-3-00
Bkg 0.1 cpm	Bkg 0.2 cpm	Bkg 50 cpm
Efficiency 33%	Efficiency 33%	Efficiency 22.36%
MDA 11.5 dpm	MDA 12.9 dpm	MDA 94 dpm
Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model BC-4	Model
Serial # 872	Serial # 833	Serial #
Cal Due 4-12-00	Cal Due 7-14-00	Cal Due N/A
Bkg 19 cpm	Bkg 51 cpm	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA 107.5 dpm	MDA 109.4 dpm	MDA

Survey Type Contamination

Building 707
 Location Module B Survey Area N
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 2-29-00 Time 1600

Comments Floor / Walls < 2 meters Unbiased survey points

1 m² scans, 1 minute pats and swipes See map for locations

#1-4 smears only (Bkg 33.1 5 min.) 30th bkg counts alpha electra < 8cpm (2,2,3)

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F	0	-4		16	F	0	8	24
2	F	0	12	N/A	17	F	0	-32	24
3	F	0	-40		18	F	0	24	18
4	F	0	-20		19	F	0	20	6
5	F	0	36	18	20	F	0	16	30
6	F	0	12	60	21	F	0	16	30
7	F	0	12	12	22	F	0	-36	24
8	F	9	0	48	23	F	0	36	204
9	F	3	-4	48	24	F	0	4	36
10	F	9	-32	0	25	F	6	-12	6
11	F	0	-28	6	26	F	0	40	24
12	F	0	16	30	27	F	0	36	-6
13	F	3	36	30	28	F	0	-40	12
14	F	0	4	18	29	F	0	-4	18
15	F	3	-56	-18	30	F	0	12	-12

Date Reviewed 3-24-00 RS Supervision:

Time Name

Signature

Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	F	0	-4	12	61				
32	F	0	16	96	62				
33	F	6	-4	48	63				
34	W < Z	0	40	18	64				
35	W < Z	0	-16	18	65				
36	W < Z	0	32	6	66				
37	W < Z	0	-8	6	67				
38	W < Z	0	-4	12	68				
39	W < Z	0	24	12	69				
40	W < Z	0	24	18	70				
41	W < Z	3	28	18	71				
42	W < Z	3	-4	6	72				
43	W < Z	3	16	6	73				
44	W < Z	3	0	-6	74				
45	W < Z	6	-4	12	75				
46	END OF SURVEY				76				
47					77				
48					75				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

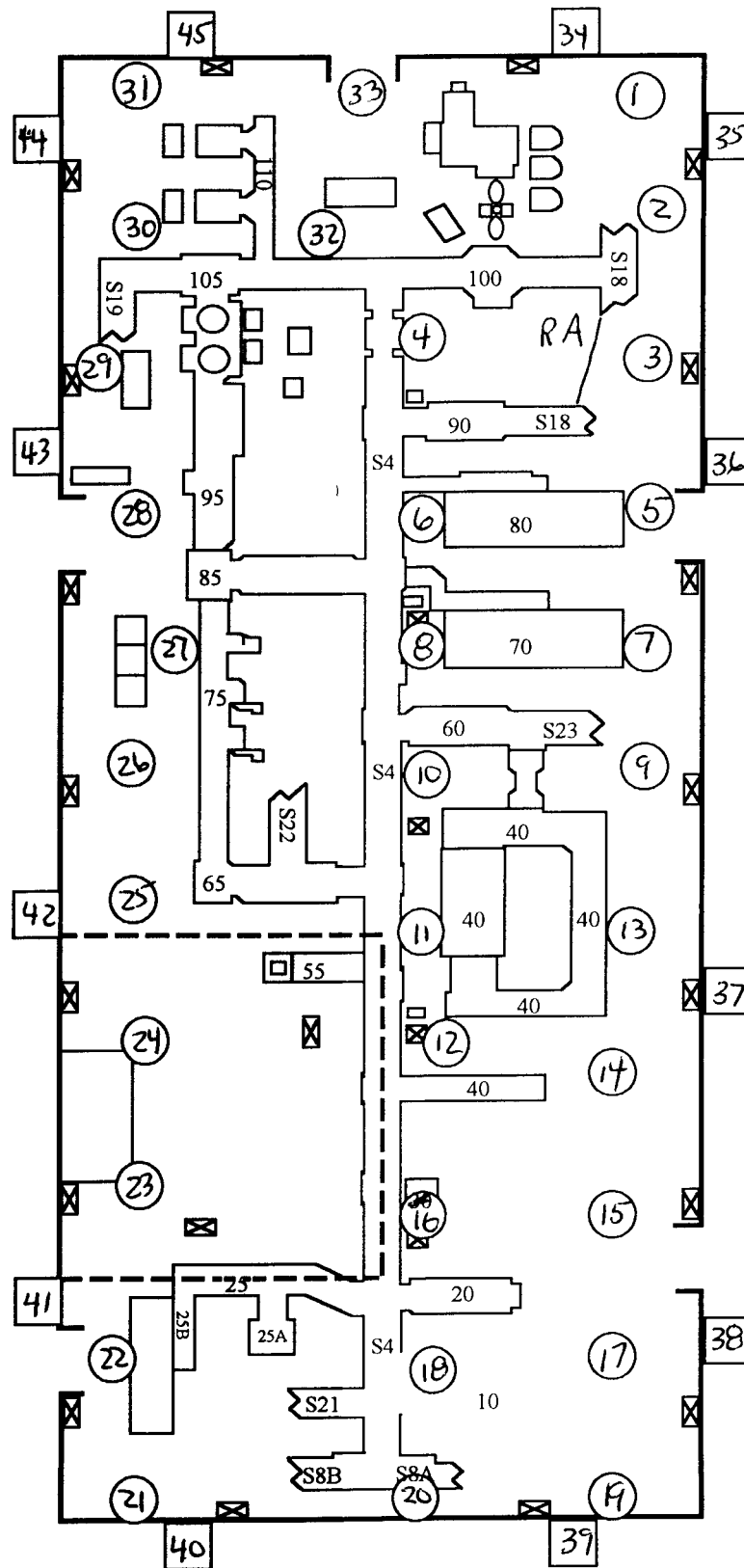
Drawing Showing Survey Points

Floor / Walls <2meters unbiased

12 wall

33 floor

45 total points

MODULE B

-- Temporary Walls

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # 837	Serial # 1245
Cal Due 7-10-00	Cal Due 5-17-00	Cal Due 7-3-00
Bkg 0.7 cpm	Bkg 0.3 cpm	Bkg 0.30 cpm
Efficiency 33%	Efficiency 33%	Efficiency 22.36%
MDA 16.9 dpm	MDA 13.9 dpm	MDA 9.4 dpm
Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model BC-4	Model
Serial # 872	Serial # 833	Serial #
Cal Due 4-12-00	Cal Due 7-14-00	Cal Due N/A
Bkg 4.8 cpm	Bkg 5.1 cpm	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA 106.5 dpm	MDA 109.4 dpm	MDA

Survey Type **Contamination**

Building **707**

Location **Module B** Survey Area **N**

Purpose **Reconnaissance Level Characterization**

RWP # **00-707-1204**

Date **3-1-00** Time **1600**

Print name / Signature / Emp #

Comments **Floor / Walls < 2 meters Biased survey points**

1 m² scans, 1 minute pats and swipes See map for locations

3 bkgd counts alpha electra < 8cpm (0.1, 1)

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Floor	0	4	138	16				
2	Floor	0	32	54	17				
3	Floor	0	8	12	18				
4	Floor	6	-28	6	19				
5	Floor	0	44	12	20				
6	Floor	3	36	72	21				
7	Floor	0	40	174	22				
8	Floor	0	-32	6	23				
9	Floor	0	104	0	24				
10	Floor	3	-20	138	25				
11	Floor	0	24	12	26				
12	Floor	0	24	24	27				
13	Floor Crit D	0	24	6	28				
14	Floor Crit D	3	-8	72	29				
15	End of Survey				30				

Date Reviewed: **3/24/00** RS Superv

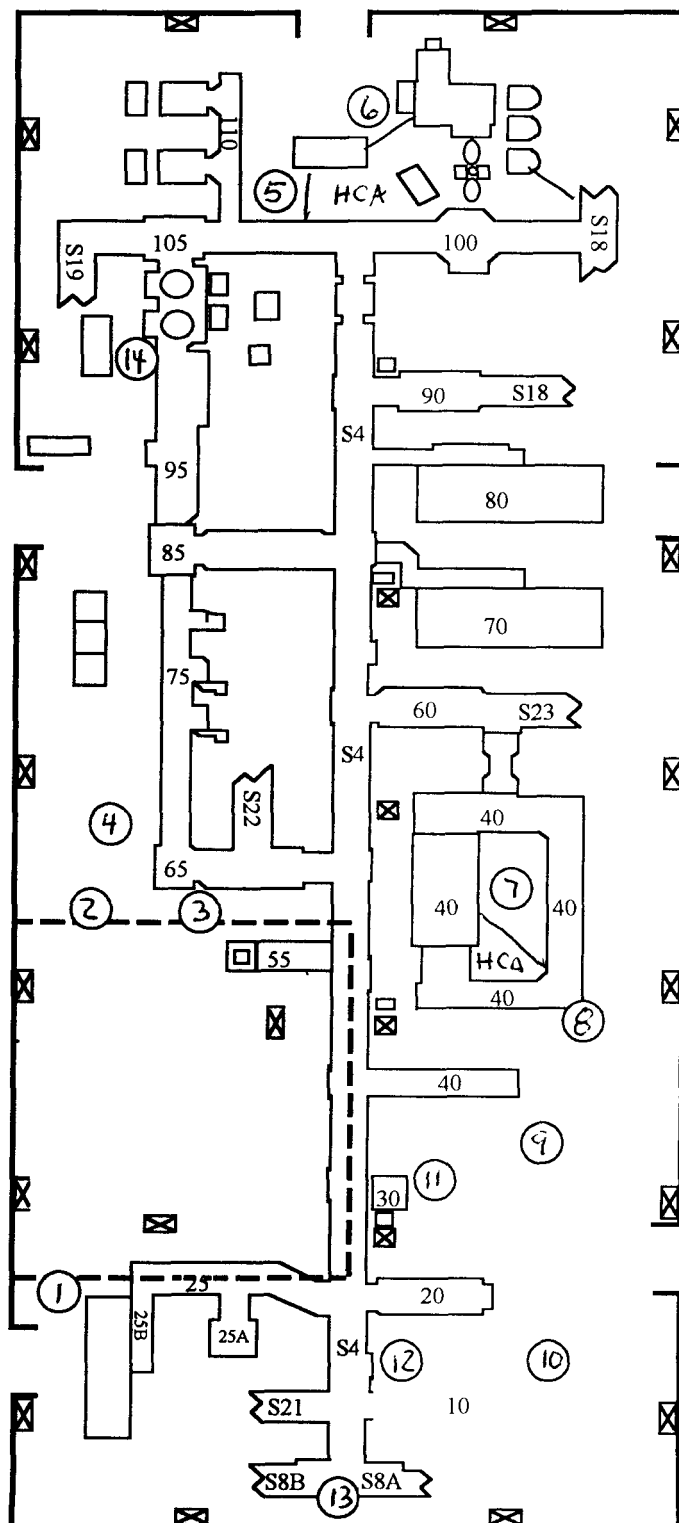
Print Name

Signature

Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

MODULE B

-- Temporary Walls

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**


Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # 837	Serial # 1245
Cal Due 4-10-00	Cal Due 5-17-00	Cal Due 7-3-00
Bkg 0.5 cpm	Bkg 0.1 cpm	Bkg 0.30 cpm
Efficiency 33%	Efficiency 33%	Efficiency 22 36%
MDA 15.6 dpm	MDA 11.5 dpm	MDA 94 dpm

Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model BC-4	Model
Serial # 872	Serial # 833	Serial #
Cal Due 4-12-00	Cal Due 7-14-00	Cal Due N/A
Bkg 48 cpm	Bkg 52 cpm	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA 106.5 dpm	MDA 110.7 dpm	MDA

Survey Type **Contamination**
 Building **707**
 Location **Module B** Survey Area **N**
 Purpose **Reconnaissance Level Characterization**

RWP # **00-707-1204**Date **3-2-00** Time **1600**Comments **Equipment Biased survey points****1 minute pats and swipes See map for locations****3 bkgd counts alpha electra 28cpm (2,1,4)****SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	GB	0	8	78	16	GB	6	-32	36
2	GB	9	-48	300	17	Window (026)	0	-20	3534
3	GB	0	8	42	18	GB	0	-28	18
4	GB	3	-12	24	19	B.O. (0077)	6	20	36
5	GB	0	-12	12	20	GB	0	-44	30
6	GB	3	-36	13800	21	Airlock	3	-8	42. K
7	GB	0	-40	18	22	GB	3	-28	48
8	GB (Bottom Gasket)	6	8	347.2 K	23	B.O. (0007)	0	28	66
9	GB	0	44	12	24	GB	24	-56	36
10	GB	0	-56	4296	25	GB	0	24	48
11	GB	3	72	306	26	GB	0	4	42
12	GB	0	-52	12	27	B.O. (0012)	0	24	36
13	GB	0	8	6	28	Pump	0	-36	18
14	GB	0	-4	24	29	Exhaust	0	-20	714
15	B.O. (0015)	0	-16	30	30	Exhaust	36	-8	408

Date Reviewed: **3-24-00** RS Supervision: 

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

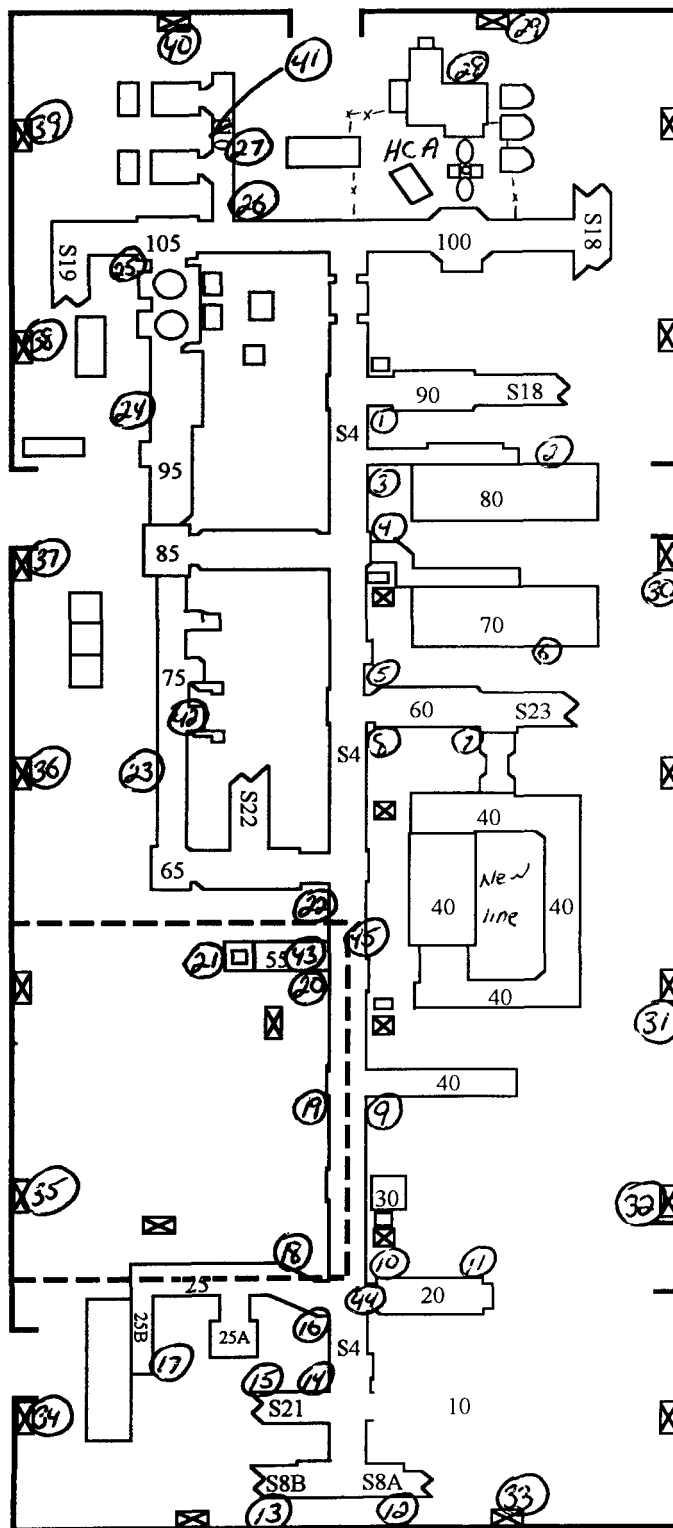
Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	Exhaust	0	0	186	61				
32	Exhaust	0	-12	90	62				
33	Exhaust	0	0	198	63				
34	Exhaust	0	-36	156	64				
35	Exhaust	3	-4	180	65				
36	Exhaust	0	4	216	66				
37	Exhaust	3	4	1806	67				
38	Exhaust	0	12	552	68				
39	Exhaust	0	76	1026	69				
40	Exhaust	0	-4	228	70				
41	Exhaust Duct - Piping	0	56	132	71				
42	Exhaust Duct - piping	3	16	324	72				
43	Exhaust Duct - piping	12	-16	120	73				
44	Exhaust Duct - piping	0	-52	126	74				
45	Exhaust Duct - piping	0	-20	90	75				
46	End of Survey				76				
47					77				
48					78				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

N/A

N/A

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

MODULE B

-- Temporary Walls

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1245</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.7 cpm</u>	Bkg <u>0.3 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>22 36%</u>
MDA <u>16.9 dpm</u>	MDA <u>13.9 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u></u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>N/A</u>
Bkg <u>4.8 cpm</u>	Bkg <u>5.1 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>106.5 dpm</u>	MDA <u>109.4 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location Module B Survey Area N
 Purpose Reconnaissance Level Characterization

RWP # 00 707-1204Date 3-1-00 Time 1600Comments Ceiling / Walls > 2 meters Biased survey points1 minute pats and swipes See map for locations3 background alpha electra 48cpm(0,1,1)**SURVEY RESULTS**

Swipe #	Location\Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1.	<u>wall > 2</u>	0	-4	6	16	"	0	-8	24
2	"	6	-40	18	17	"	0	20	6
3.	"	0	12	6	18	"	0	36	24
4	"	3	-28	12	19	"	0	44	6
5	"	0	52	30	20				
6	"	3	32	12	21				
7.	"	0	28	6	22				
8	"	3	24	-6	23				
9	"	3	-12	6	24				
10.	"	3	-56	18	25	<u>N A</u>			
11	"	0	36	0	26				
12	"	0	12	24	27				
13.	"	0	24	12	28				
14.	"	0	-32	-6	29				
15	"	0	8	24	30				

Date Reviewed: 32400 RS Supervision:

INSTRUMENT DATA

Building	707		
Location	B - MOD	Survey Area	N
Purpose	Reconnaissance Level Characterization		

RWP # 00-707-1204

Date 3-23-00 Time 0900

RCT _____
 Print name / Signature / Emp #

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>05 cpm</u>	Bkg <u>00 cpm</u>	Bkg <u>30 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.63%</u>
MDA <u>15.6 dpm</u>	MDA <u>82 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>N/A</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>540 cpm</u>	Bkg <u>53 cpm</u>	Bkg <u>30 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>20.63%</u>
MDA <u>1123 dpm</u>	MDA <u>111.3 dpm</u>	MDA <u>94 dpm</u>

Comments Ceiling / Walls > 2 meters Biased survey points
1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
20	C > 2	3	36	6					
21	C > 2	0	28	0					
22	C > 2	3	40	12					
23	C > 2	0	44	30					
24	C > 2	3	4	36					
25	C > 2	0	-40	42					
26	C > 2	3	48	36					
27	C > 2	0	-4	36		N/A			
28	C > 2	0	60	42					
29	C > 2	0	-4	30					
30	C > 2	0	12	54					
	END OF SURVEY								
	N/A								

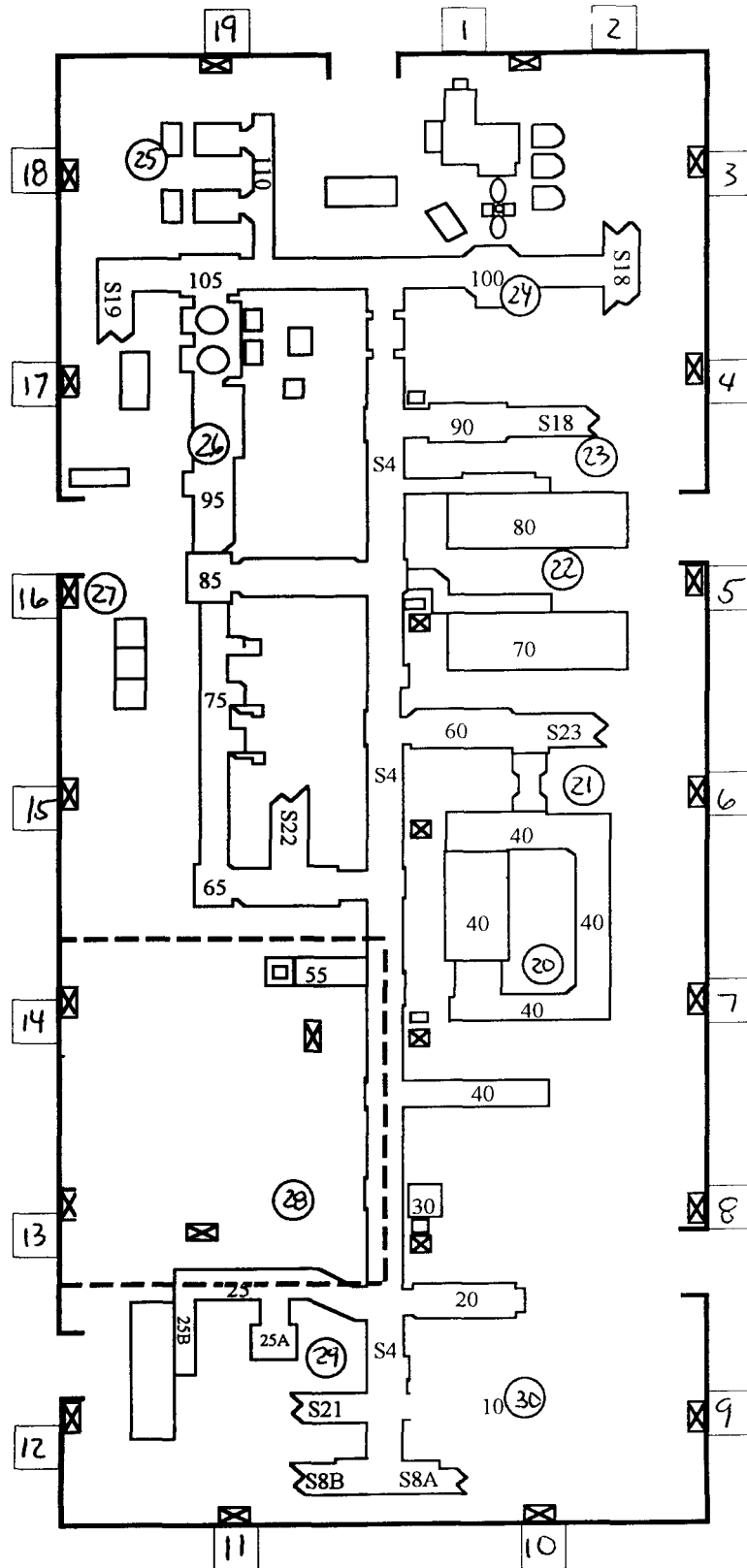
Date Reviewed _____ **RS Supervision** _____ / _____ / _____
Print Name Signature Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE B



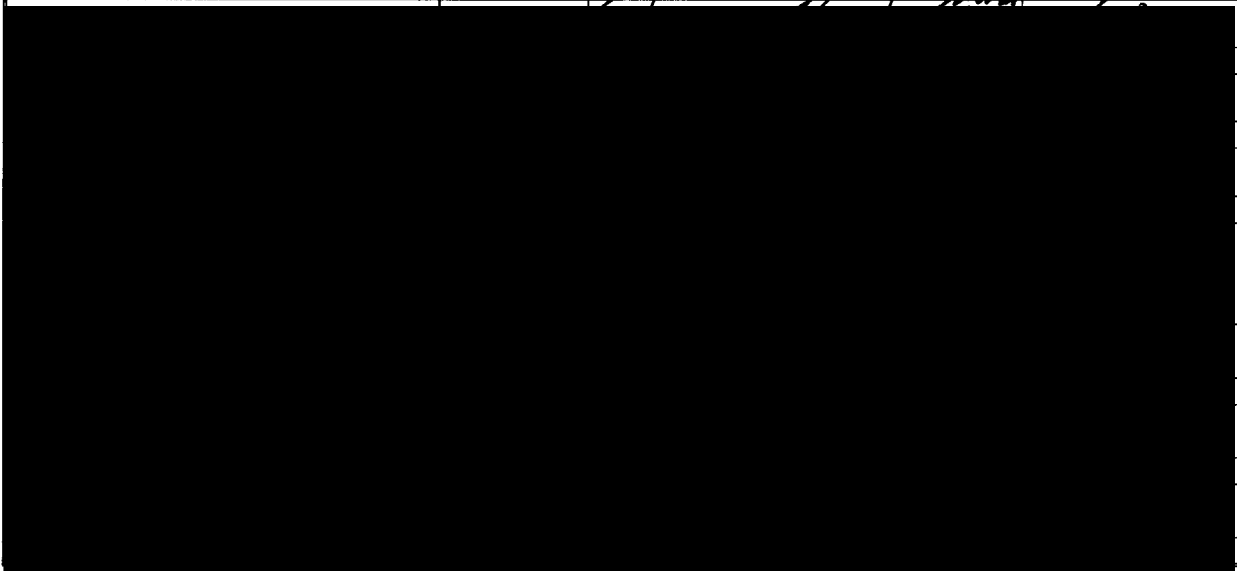
-- Temporary Walls

[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area 0		Survey Unit N/A		Area (m ²) 634	
Survey Unit Description INSIDE OF MODULE C (ROOM 110) AND C-PIT BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
58	54	45	4	0	72
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707
Survey Area: O	Survey Unit: N/A
Survey Unit Description: INSIDE OF MODULE C (ROOM 110) RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information: Survey Type Reconnaissance <input checked="" type="checkbox"/> Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation:	
	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building: 707
Survey Area: O		Survey Unit: N/A
Survey Unit Description: INSIDE OF MODULE C (ROOM 110) AND C-PIT BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>45 <u>unbiased</u> survey points uniformly distributed throughout room 110</p> <p>13 <u>unbiased</u> survey points uniformly distributed throughout "c-pit" (2 per wall, 5 on floor)</p> <p>14 <u>biased</u> survey points at the following locations</p> <ul style="list-style-type: none"> - 5 points around floors adjacent to contained contamination areas (where accessible) - 2 points near criticality drain locations - 3 points in area where equipment was stripped out (NW area of room) - 4 points beneath (large and small) tanks in C-Pit <p>CEILINGS/WALLS > 2 meters</p> <p>30 <u>biased</u> surveys (divided evenly between wall and ceiling when possible) with focus on following areas of room 110</p> <ul style="list-style-type: none"> - Walls behind process lines - Ceilings above GB's - Ceilings/walls adjacent to c-cells/tents - Stained or discolored areas - Walls/ceilings near GB's mounted high on walls - Areas around pipe penetrations or any other penetrations <p>10 <u>biased</u> surveys (5 wall, 5 ceiling) in "C-Pit" as determined by RCT</p> <p>EQUIPMENT</p> <p>45 <u>biased</u> survey points on equipment with one or more samples from</p> <ul style="list-style-type: none"> - Each GB "section" extending from the main (center) GB lines - Gloveboxes which have visible leaks or contained spills beneath them - 2 surveys points at each of 5 room exhaust ducts - Bag-in/bag out ports to GB lines - 5 survey points on top of overhead piping (where locations are accessible through reach tools) 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707
Survey Area: O		Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE C (ROOM 110) AND C-PIT BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 72 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL shall be documented. CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 4 biased (paint) media samples taken as follows: <ul style="list-style-type: none"> - 1 sample near one of the entrances to the module - 1 sample around a posted HCA - 1 sample beneath a GB - 1 sample near a criticality drain 	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Pg superseded 01/18/00 by #2

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID 99-0002	Building 707
Survey Area O	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE C (ROOM 110) AND C-PIT BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area. O	Survey Unit: N/A
Survey Unit Description: INSIDE OF MODULE C (ROOM 110) AND C-PIT BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

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Pg superseded 01/18/00 JF Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID 99-0002	Building 707
Survey Area O	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE C (ROOM 110) AND C-PIT BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02. Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and <u>in addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering. Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: O	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE C (ROOM 110) AND C-PIT BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 707	
Survey Area: O		Survey Unit: N/A	
Survey Type: <input checked="" type="checkbox"/> Reconnaissance Level Characterization Survey X <input type="checkbox"/> Final Status Survey			
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys		1	db
Total Activity Surveys		1	db
Exposure Rate Surveys		NA	NA
Removable Surveys		1	db
Media Samples		228	EDM
Volumetric Samples		NA	NA
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys		1	db
Total Activity Surveys		1	db
Exposure Rate Surveys		NA	NA
Removable Surveys		1	db
Media Samples		228	EDM
Volumetric Samples		NA	NA
Comments			

Page superseded by 4/12/00 Change #4

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____
Model _____	Model _____	Model _____	Building: _____
Serial # _____	Serial # _____	Serial # _____	Location: _____
Cal Due _____	Cal Due _____	Cal Due _____	Purpose: _____
Bkg. _____	Bkg. _____	Bkg. _____	RWP # _____
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____
Mfg. _____	Mfg. _____	Mfg. _____	Print name _____ Signature _____ Emp. # _____
Model _____	Model _____	Model _____	RCT _____ / _____ / _____
Serial # _____	Serial # _____	Serial # _____	Print name _____ Signature _____ Emp. # _____
Cal Due _____	Cal Due _____	Cal Due _____	
Bkg. _____	Bkg. _____	Bkg. _____	
Efficiency _____	Efficiency _____	Efficiency _____	
MDA _____	MDA _____	MDA _____	

PRL #: _____

Comments: _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1				26			
2				27			
3				28			
4				29			
5				30			
6				31			
7				32			
8				33			
9				34			
10				35			
11				36			
12				37			
13				38			
14				39			
15				40			
16				41			
17				42			
18				43			
19				44			
20				45			
21				46			
22				47			
23				48			
24				49			
25				50			

Date Reviewed: _____ RS Supervision: _____ / _____ / _____

Print Name _____ Signature _____ Emp. # _____

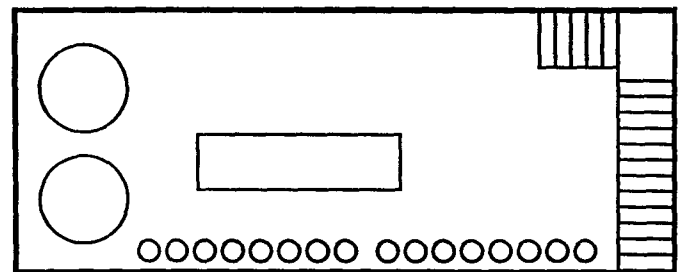
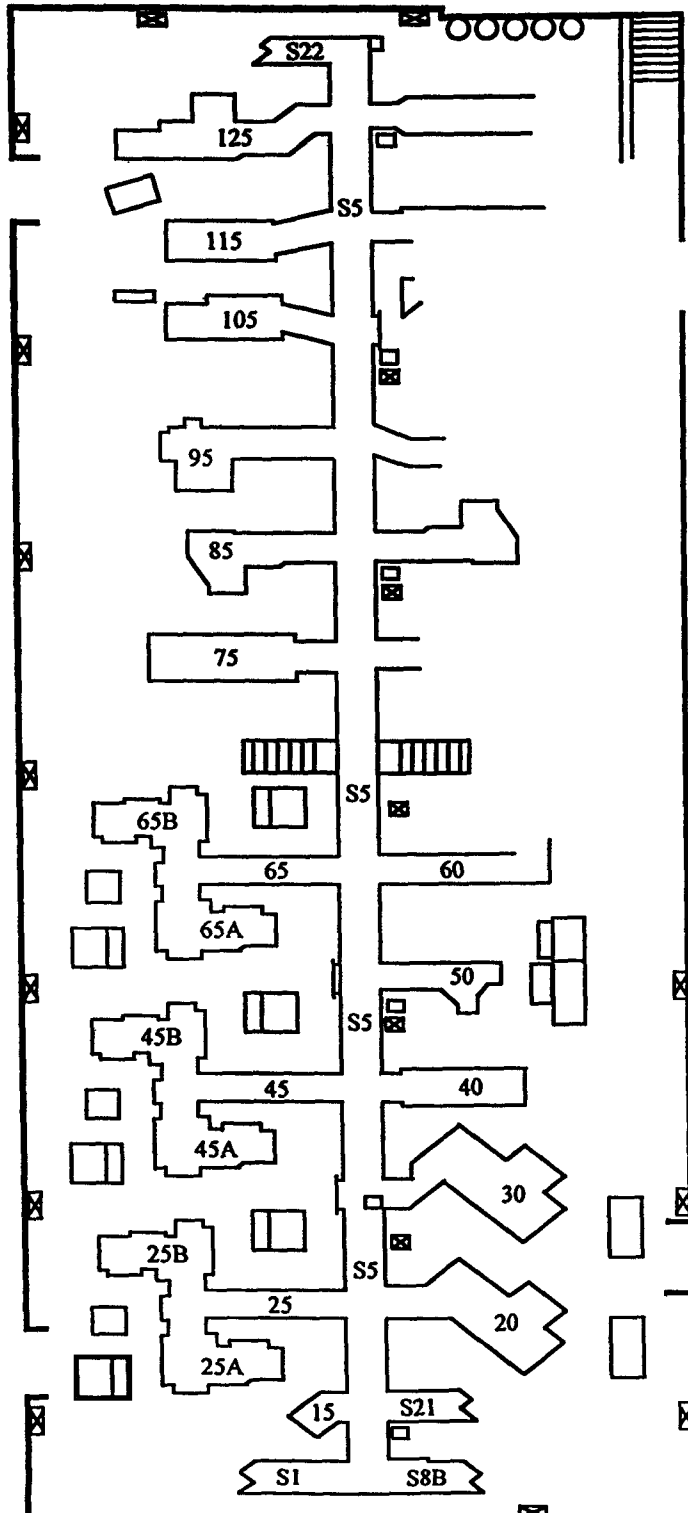
330

254/466

NORTH POINT ENVIRONMENTAL TECHNOLOGY SUPPLY

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE C

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3265</u>
Cal Due <u>4-16-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>6.0 cpm</u>	Bkg <u>0.5 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>2101</u>
MDA <u>8.2 dpm</u>	MDA <u>15.6 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NE Tech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>3120</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>4-26-00</u>
Bkg <u>6.1 cpm</u>	Bkg <u>52 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>12109</u>
MDA <u>118.6 dpm</u>	MDA <u>110.4 dpm</u>	MDA <u>94 dpm</u>

Survey Type Contamination

Building 707
 Location Module C Survey Area C
 Purpose Reconnaissance Level Characterization

RWP # 007071204Date 3-9-00 Time DaysComments Equipment Biased survey points1 minute pats and swipes See map for locations3 bkgd counts alpha electra <8cpm (2,2,4)**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	GB 58B	0	-4	144	16	GB-CC& Port 12	0	20	996
2	GB 521	6	-40	108	17	GB CC& Port 18	30	24	4638
3	S-5 CNVYR Port 109	60	-40	8490	18	Crit Drain	21	-4	690
4	S-5 CNVYR under Port 13	0	-36	84	19	7-C-110 Port 0019	9	-12	4632
5	Air Vent #31	0	-32	336	20	GB-7-C-110 Window 0033	27	44	4344
6	GB C-50	3	0	66	21	GB 7-C-110 Port 43	12	-28	216
7	GB C-60	6	-24	60	22	GB C120 Bagout Port	0	48	120
8	GB C-70 S-5 CNVYR	3	40	66	23	3 step rollaround stool	0	0	840
9	Air Vent #27	0	-32	222	24	S-5 CNVYR Crit Drain	3	24	1080
10	GB C-80	3	20	90	25	GB 125 Port 28	3	8	156
11	GB C-80 S-5 CNVYR	0	16	30	26	GB 115 Port 18	129	-36	37806
12	GB C-90 S-5 CNVYR	0	-12	78	27	GB 115 Port 16	36	-40	9096
13	GB C-90 Port 345	3	-20	36	28	GB 115 Port 8	59	28	2646
14	Air Vent #25	3	-28	354	29	GB 115 Port 5	147	8	8178
15	S-5 CNVYR	6	-12	60	30	GB 105 S-5 CNVYR	3	44	12894

Date Reviewed: 3-16-00 RS Supervision: [REDACTED]

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

2 of 3

Drawing Showing Survey Points

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	GB 105 S-5 CONUYR	0	-20	33750	61				
32	GB C95 Port 45	3	52	642	62				
33	GB C95 Port 17	0	-32	990	63				
34	Crit Drain	3	60	432	64				
35	S-5 CONUYR Port 34	0	28	36	65				
36	GB C45B Port 0043	21	20	4716	66				
37	GB C45 Under Port 0034	15	-36	144	67				
38	GB C45 Port 0025	6	28	10086	68				
39	S-5 CONUYR Port 32	9	24	7578 1263	69				
40	GB C45 S-5 CONUYR	51	-8	2418	70				
41	GB C45B on Health Sign	30	24	4338	71				
42	GB C45B Port 0057	81	36	3492	72				
43	GB 25B S-5 CONUYR	0	8	1824	73				
44	GB 25B Port 57	12	-24	2238	74				
45	GB 25A Under Port 32	60	-36	4674	75	N/A			
46	END OF SURVEY				76				
47					77				
48					78				
49					79				
50					80				
51					81				
52					82				
53	N/A				83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

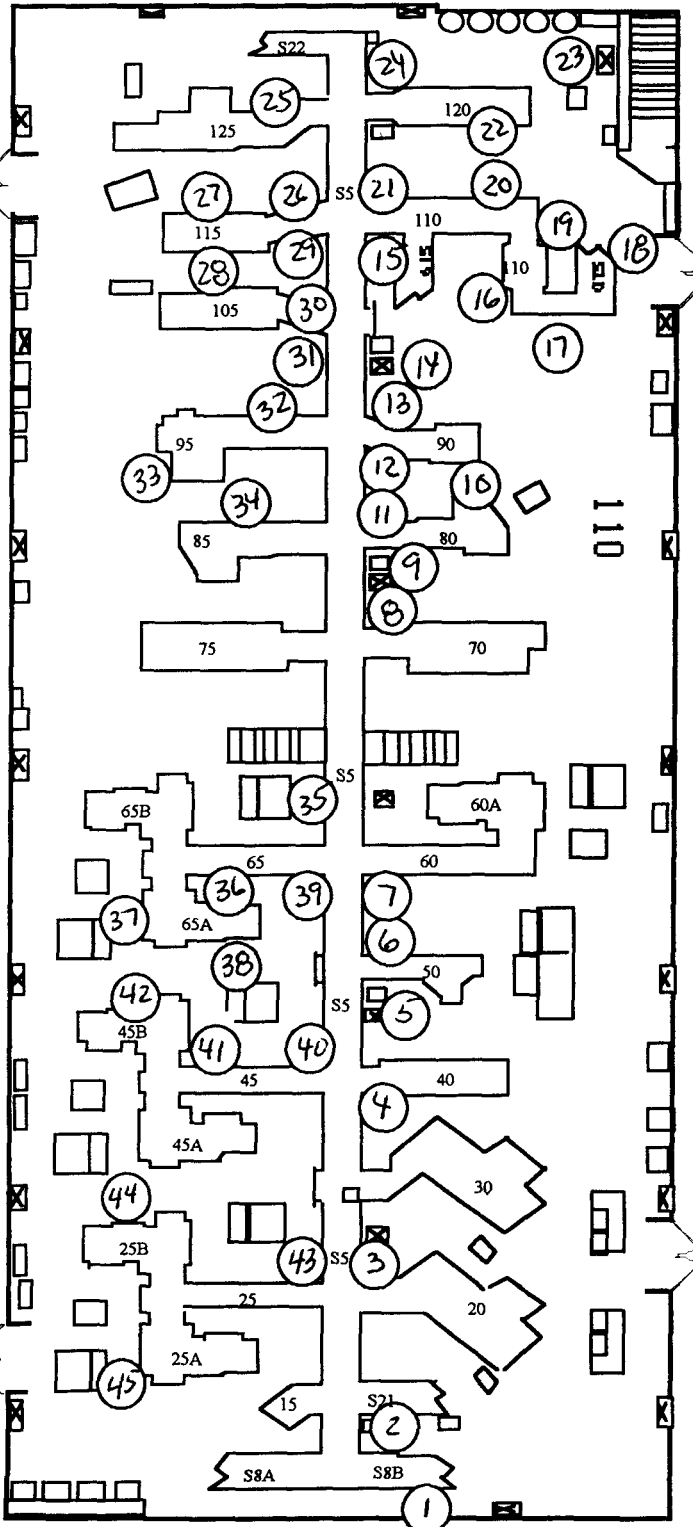
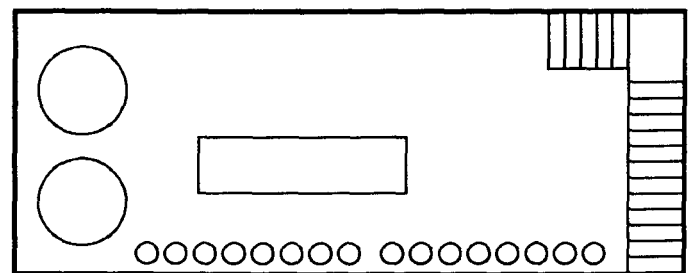
3 of 3

Drawing Showing Survey Points

MODULE C



C-Pit



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3265</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21%</u>
MDA <u>11.5 dpm</u>	MDA <u>12.9 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>3120</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>4-26-00</u>
Bkg <u>51 cpm</u>	Bkg <u>53 cpm</u>	Bkg <u>2.0</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>21%</u>
MDA <u>109.4 dpm</u>	MDA <u>111.3 dpm</u>	MDA <u>94 dpm</u>

Survey Type Contamination

Building 707
 Location Module C Survey Area ()
 Purpose Reconnaissance Level Characterization

RWP # CC7071204Date 3-9-00 Time DaysComments Ceiling / Walls > 2 meters Biased survey points

1 minute pats and swipes See map for locations

3 bkgd Counts alpha electra < 8cpm (0, 2, 3) 3-9-00

3 bkgd Counts alpha electra < 8cpm (0, 0, 3) 3-10-00

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	W > 2m	0	64	-12	16	W > 2m	0	24	0
2	" "	0	64	-6	17	" "	6	-40	0
3	" "	0	-12	-12	18	" "	0	24	-6
4	" "	0	-16	6	19	" "	3	48	-18
5	" "	0	-12	0	20	" "	3	-40	-12
6	" "	0	32	18	21	Ceiling	3	16	6
7	" "	0	40	0	22	" "	0	20	-12
8	" "	0	88	12	23	" "	0	12	0
9	" "	0	-40	6	24	" "	3	-16	12
10	" "	0	4	6	25	" "	0	80	12
11	" "	0	20	-6	26	" "	3	28	-6
12	" "	0	16	0	27	" "	0	32	0
13	" "	3	24	-18	28	" "	0	-40	-12
14	" "	3	32	12	29	" "	21	40	6
15	" "	3	36	12	30	" "	0	16	18

Date Reviewed: 3-16-00 RS Supervisor

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>1.0 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>2063</u>
MDA <u>12.9 dpm</u>	MDA <u>115 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>1233</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>53 cpm</u>	Bkg <u>52 dpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>2063</u>
MDA <u>1113 dpm</u>	MDA <u>1104 dpm</u>	MDA <u>94 dpm</u>

Survey Type Contamination

Building 707
 Location C.P.T. Survey Area 3400
 Purpose Reconnaissance Level Characterization

RWP # 007071204Date 3-14-00 Time Days

RCT _____
 Print name / Signature / Emp #

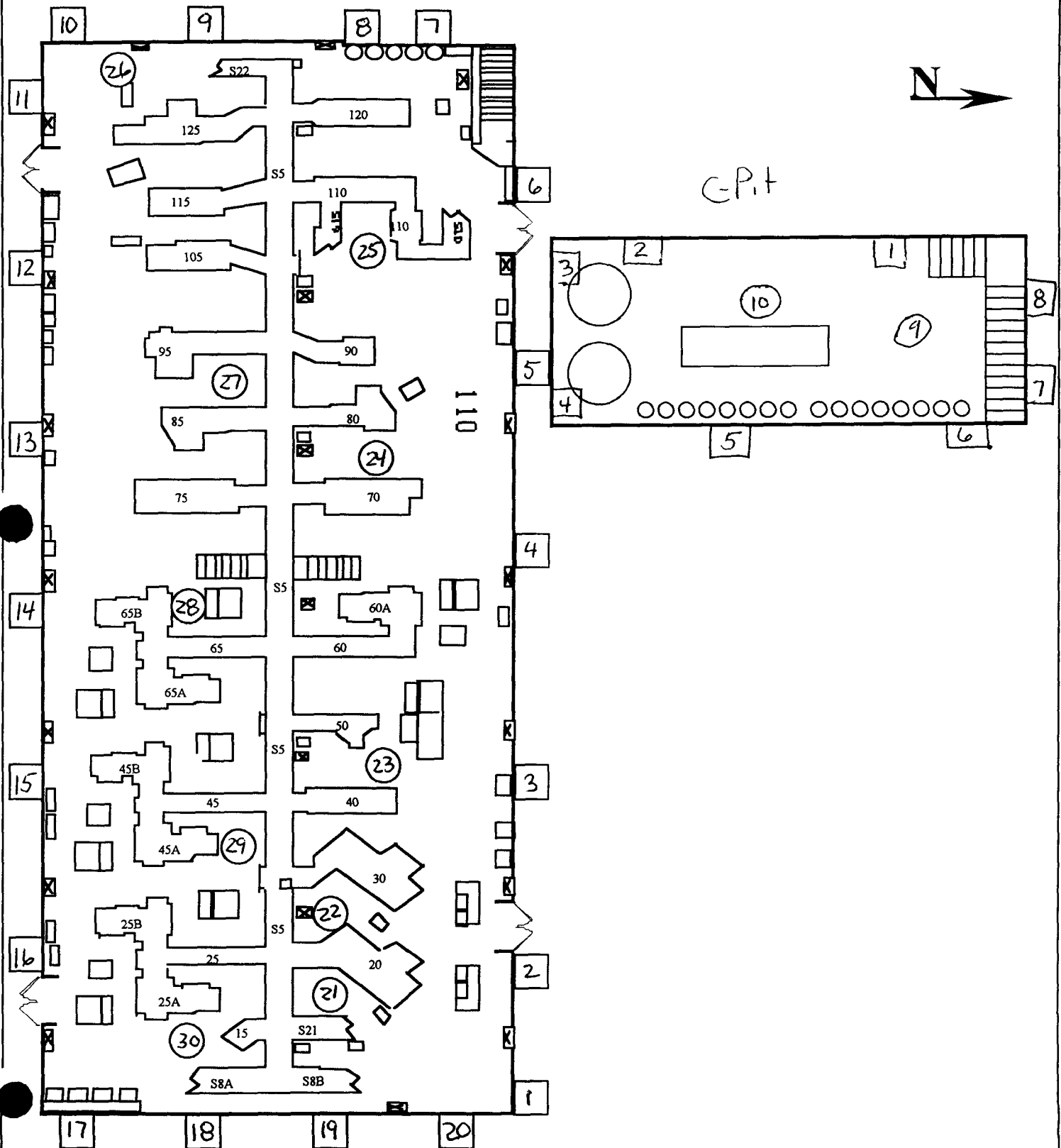
Comments Ceiling / Walls > 2 meters Biased survey points1 minute pats and swipes See map for locations Bkg - 8 cpm3 bkg counts alpha electra 8 cpm (1,1,3)**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	<u>W > 2m</u>	<u>3</u>	<u>-12</u>	<u>6</u>	16				
2	<u>" "</u>	<u>3</u>	<u>-8</u>	<u>66</u>	17				
3	<u>" "</u>	<u>6</u>	<u>-28</u>	<u>24</u>	18				
4	<u>" "</u>	<u>6</u>	<u>-8</u>	<u>120</u>	19				
5	<u>" "</u>	<u>1032</u>	<u>-16</u>	<u>12</u>	20				
6	<u>" "</u>	<u>159</u>	<u>16</u>	<u>18</u>	21				
7	<u>" "</u>	<u>69</u>	<u>-52</u>	<u>888</u>	22				
8	<u>" "</u>	<u>3</u>	<u>28</u>	<u>24</u>	23				
9	<u>Ceiling</u>	<u>5</u>	<u>-48</u>	<u>12</u>	24				
10	<u>Ceiling</u>	<u>3</u>	<u>-44</u>	<u>30</u>	25				
11	<u>End of Survey</u>				26				
12					27				
13					28				
14					29				
15					30				

Date Reviewed 3-16-00 RS Supervision _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

MODULE C

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1518</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.0 cpm</u>	Bkg <u>0.5 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21%</u>
MDA <u>8.2 dpm</u>	MDA <u>15.4 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NE Tech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>3265</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>6.1 cpm</u>	Bkg <u>52 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>21%</u>
MDA <u>118.6 dpm</u>	MDA <u>110.4 dpm</u>	MDA <u>94 dpm</u>

Survey Type Contamination

Building 707
 Location Module C Survey Area 0
 Purpose Reconnaissance Level Characterization

RWP # 007071204Date 3-10-00 Time DaysComments Floor / Walls < 2 meters Biased survey points1 m² scans, 1 minute pats and swipes See map for locations3 bkgd counts alpha electra < 8cpm (3,3,5)**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F CPIT under GB	9	16	360	16				
2	S-EB F under GB	3	20	360	17				
3	F under GB C40	12	56	6	18				
4	F under GB CBC	0	4	12	19				
5	F under S-19 CNVYR	3	24	1416	20				
6	F Crit Drain	3	28	630	21				
7	F under GB 165	0	40	18	22				
8	F under GB 105	3	32	54	23				
9	F under GB 45B	0	44	30	24				
10	F under GB 45B	0	16	120	25				
11	Wall next to GB 45B	0	16	930	26				
12	F under GB 45B	6	40	1350	27				
13	F under GB 45A CNVYR105	45	0	1084	28				
14	F mat GB 25B	3	24	1704	29				
15	END OF SURVEY				30				

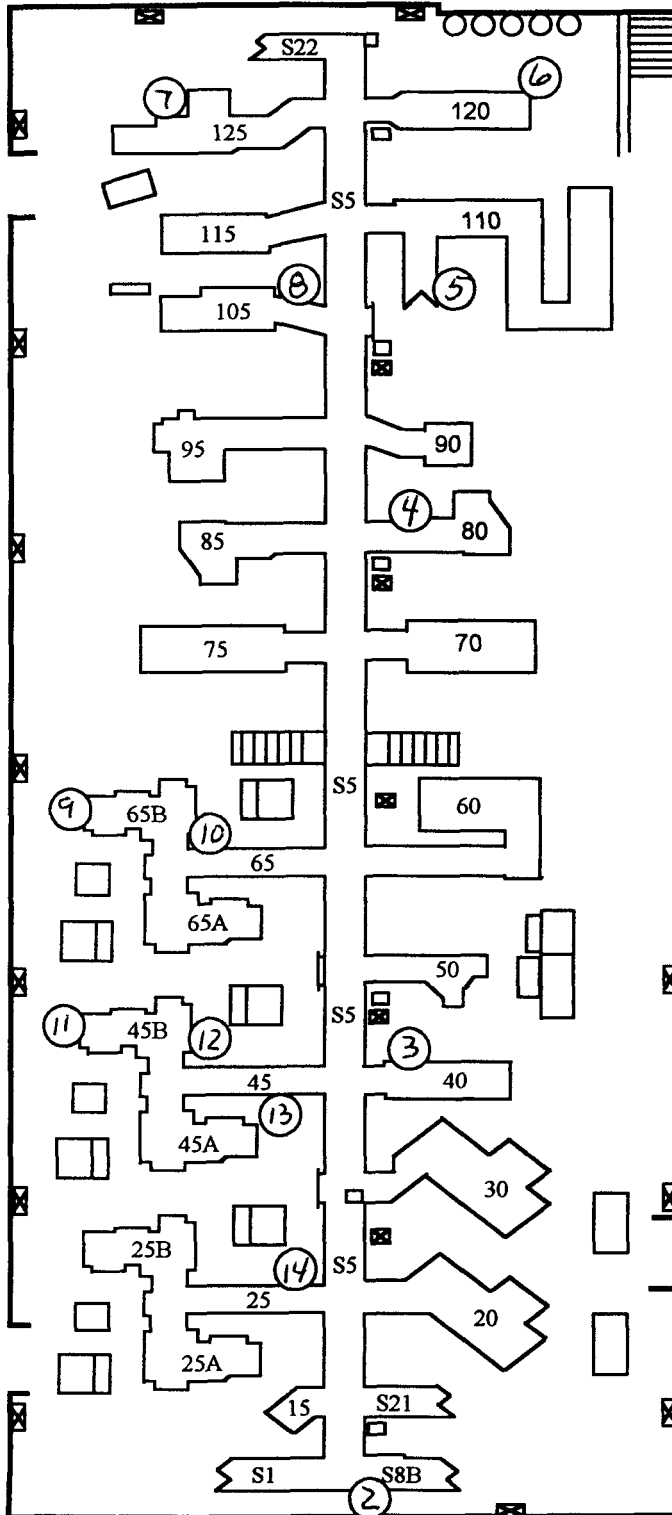
Date Reviewed: 3-16-00 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

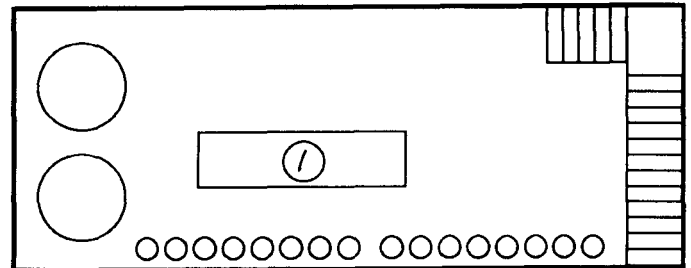
RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE C



C-Pit



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3265</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.4 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20%</u>
MDA <u>11.5 dpm</u>	MDA <u>14.6 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NE Tech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>1389</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>47 cpm</u>	Bkg <u>44 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>100%</u>
MDA <u>105.5 dpm</u>	MDA <u>1024 dpm</u>	MDA <u>94 dpm</u>

Survey Type Contamination

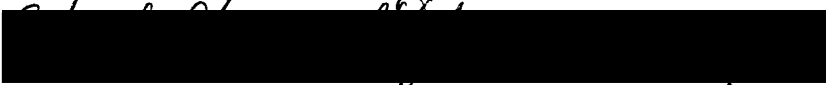
Building 707
 Location C Module Survey Area 0
 Purpose Reconnaissance Level Characterization

RWP # 00 707 1204Date 3-7-00 Time Days

Comments Floor / Walls < 2 meters Unbiased survey points 1 of 24
1 m² scans, 1 minute pats and swipes See map for locations 3-7-00
3 bkgd counts alpha electra +8cpm (1,1,3) 3-6-00
3 bkgd counts alpha electra +8cpm (2,3,3) 3-7-00

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F	0	12	6	16	F	6	16	60
2	F	6	36	150	17	F	15	32	144
3	F	3	28	54	18	F	9	28	24
4	F	3	4	6	19	F	0	24	24
5	F	0	16	66	20	F	3	60	486
6	F	6	76	36	21	F	12	0	60
7	F	0	36	12	22	F	9	-28	258
8	F	0	-40	18	23	F	6	44	24
9	F	6	40	18	24	F	9	24	162
10	F	0	32	18	25	F	0	24	144
11	F	0	40	18	26	F	0	40	138
12	F	0	16	12	27	F	0	84	78
13	F	0	-32	66	28	F	0	-40	12
14	F	0	8	78	29	F	0	28	6
15	F	3	0	0	30	F	15	4	270

Date Reviewed: 3-16-00 RS Supervision: 

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY****Drawing Showing Survey Points**1.2.4
3700

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	F	3	-48	30	61				
32	F	9	60	54	62				
33	F	0	-40	36	63				
34	W < 2 meters	6	24	36	64				
35	" "	0	12	42	65				
36	" "	0	-16	12	66				
37	" "	0	4	121	67				
38	" "	21	-52	1878	68				
39	" "	48	-4	7596	69				
40	" "	0	-4	18	70				
41	" "	0	84	48	71				
42	" "	3	20	18	72				
43	" "	3	48	4446	73				
44	" "	0	-16	48	74				
45	" "	3	-24	36	75				
46	END OF SURVEY				76				
47					77				
48					78				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1245</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.3 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21%</u>
MDA <u>12.9 dpm</u>	MDA <u>13.9 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NE Tech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>3265</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>5.2 cpm</u>	Bkg <u>5.0 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>21%</u>
MDA <u>110.4 dpm</u>	MDA <u>108.4 dpm</u>	MDA <u>94 dpm</u>

Survey Type. Contamination

Building 707
 Location C Pit Survey Area 1
 Purpose Reconnaissance Level Characterization

RWP # CC 707 1204Date 3-8-00 Time Days

Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Unbiased survey points3-4-41 m² scans, 1 minute pats and swipes See map for locations3 bkgd counts alpha electra < 8 cpm (0, 2, 4) 37003 bkgd counts alpha electra < 8 cpm (0, 0, 3) 3800**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F	6	-4	12	16				
2	F	648	-20	7800	17				
3	F	84	4	1650	18				
4	F	6	16	78	19				
5	F	0	8	36	20				
6	10 < 1 m	9	-28	678	21				
7	" "	3480	-20	8910	22				
8	" "	9	-40	366	23				
9	" "	6	-12	768	24				
10	" "	0	16	186	25				
11	" "	3	48	540	26				
12	" "	0	40	54	27				
13	" "	204	-16	6300	28				
14	NA End of Survey				29				
15.					30				

Date Reviewed: 3-16-00 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

4 of 4

MODULE C

Floor / Walls <2meters unbiased

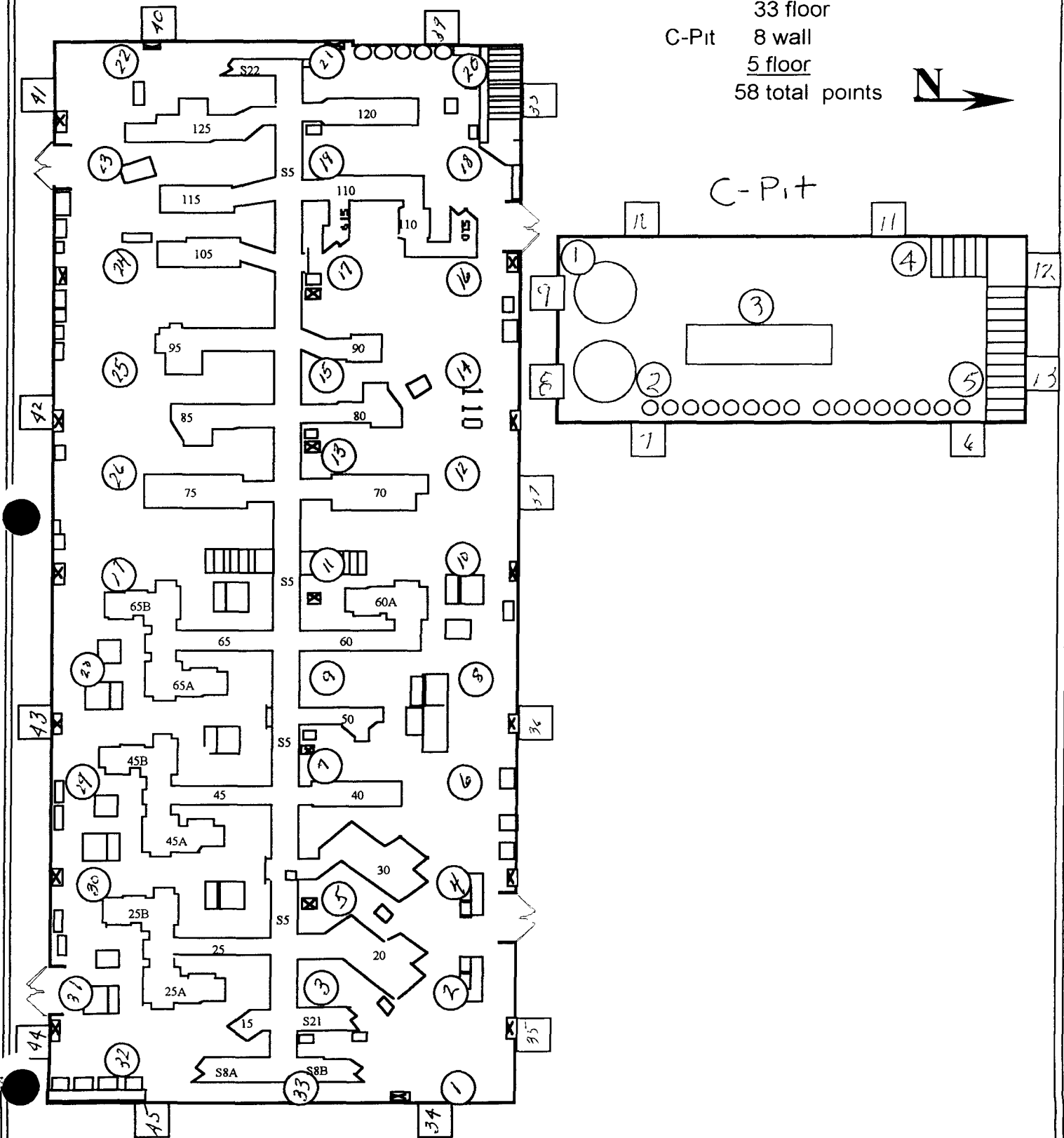
C-mod 12 wall

33 floor

C-Pit 8 wall

5 floor

58 total points

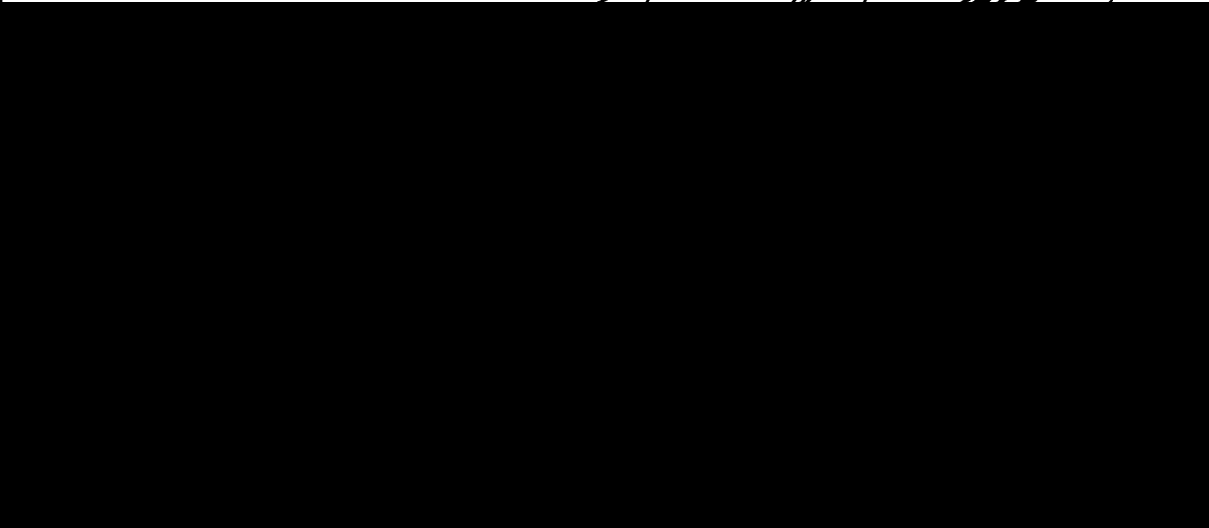


[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area P		Survey Unit N/A		Area (m ²) 634	
Survey Unit Description INSIDE OF MODULE D (ROOM 115) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
45	37	40	4	0	52
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002		Building: 707	
Survey Area: P		Survey Unit: N/A	
Survey Unit Description: INSIDE OF MODULE D (ROOM 115) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS			
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____			
Justification for Classification: N/A			
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads			
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads			
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>			
Labeling Requirements: NONE			
Survey Package Implementation:			
			
RESS Manager Printed Name		Employee #	RESS Manager Signature
			Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707
Survey Area: P		Survey Unit N/A
Survey Unit Description INSIDE OF MODULE D (ROOM 115) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>45 <u>unbiased</u> survey points uniformly distributed throughout room 115</p> <p>7 <u>biased</u> survey points at the following locations</p> <ul style="list-style-type: none"> - 5 points around floors adjacent to contained contamination areas (where accessible) - 2 points near criticality drain locations <p>CEILINGS/WALLS > 2 meters</p> <p>30 <u>biased</u> surveys (divided evenly between wall and ceiling when possible) with focus on following areas of room 115</p> <ul style="list-style-type: none"> - Walls behind process lines - Ceilings above GB's - Ceilings/walls adjacent to c-cells/tents - Stained or discolored areas - Walls/ceilings near GB's mounted high on walls - Areas around pipe or other penetrations <p>EQUIPMENT</p> <p>40 <u>biased</u> survey points on equipment with one or more samples from</p> <ul style="list-style-type: none"> - Each GB "section" extending from the main (center) GB lines - Gloveboxes which have visible leaks or contained spills beneath them - 2 surveys points at each of 5 room exhaust ducts - Bag-in/bag out ports to GB lines - 5 survey points on top of overhead piping (where locations are accessible through reach tools) 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707
Survey Area: P		Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE D (ROOM 115) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 52 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 4 biased (paint) media samples taken as follows: <ul style="list-style-type: none"> - 1 sample near one of the entrances to the module - 1 sample around a posted HCA - 1 sample beneath a process GB - 1 sample near a criticality drain 	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Ag superseded 01/18/00

Aug #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: P	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE D (ROOM 115) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <u>Contamination Monitoring Requirements, prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <u>Contamination Monitoring Requirements</u> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area P	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE D (ROOM 115) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

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By superseded 01/18/00 JN Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: P	Survey Unit N/A
Survey Unit Description INSIDE OF MODULE D (ROOM 115) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and <u>in addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: P	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE D (ROOM 115) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

Package ID. 99-0002	Building 707	
Survey Area. P	Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>		
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	1	db
Total Activity Surveys	1	db
Exposure Rate Surveys	NA	NA
Removable Surveys	1	db
Media Samples	ael	KOM
Volumetric Samples	NA	NA
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	1	db
Total Activity Surveys	1	db
Exposure Rate Surveys	NA	NA
Removable Surveys	1	db
Media Samples	ael	KOM
Volumetric Samples	NA	NA
Comments 		

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REMEDIATION MONITORING SURVEILLANCE TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____
Model _____	Model _____	Model _____	Building: _____
Serial # _____	Serial # _____	Serial # _____	Location* _____
Cal Due _____	Cal Due _____	Cal Due _____	Purpose _____
Bkg. _____	Bkg. _____	Bkg. _____	RWP # _____
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____
Mfg. _____	Mfg. _____	Mfg. _____	Print name _____ Signature _____ Emp # _____
Model _____	Model _____	Model _____	RCT _____ / _____ / _____
Serial # _____	Serial # _____	Serial # _____	Print name _____ Signature _____ Emp # _____
Cal Due _____	Cal Due _____	Cal Due _____	
Bkg. _____	Bkg. _____	Bkg. _____	
Efficiency _____	Efficiency _____	Efficiency _____	
MDA _____	MDA _____	MDA _____	

PRL #: _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1 _____	_____	_____	_____	26 _____	_____	_____	_____
2 _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33 _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

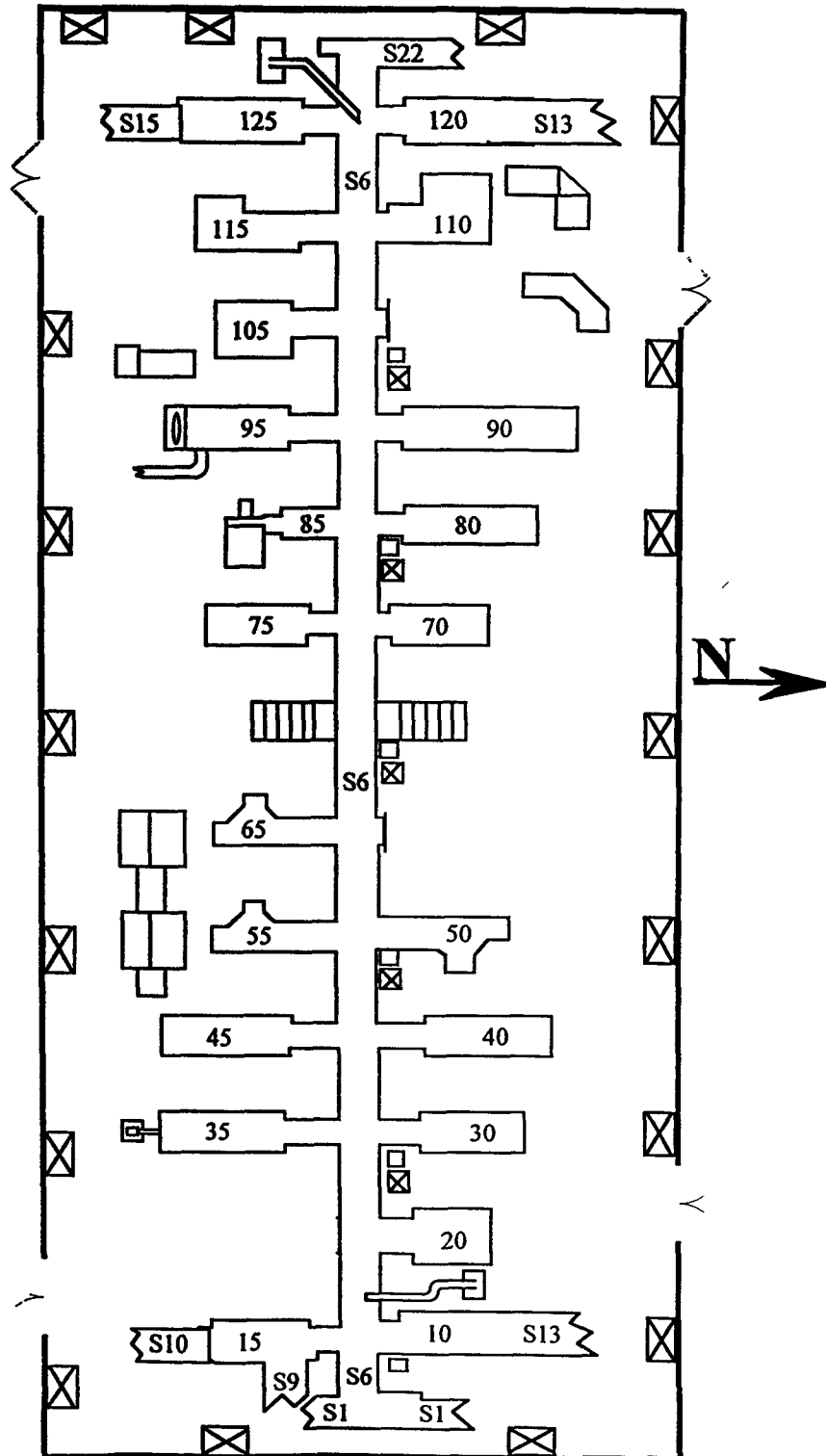
Date Reviewed: _____ RS Supervision: _____ / _____ / _____
 Print Name _____ Signature _____ Emp # _____

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263/466

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE D

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3265</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.0 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.01%</u>
MDA <u>115 dpm</u>	MDA <u>82 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u></u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>N/A</u>
Bkg <u>58 cpm</u>	Bkg <u>52 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>116 dpm</u>	MDA <u>110.4 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location D-mod Survey Area P
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 3-8-00 Time 1530

Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Biased survey points

1 m² scans, 1 minute pats and swipes See map for locations

3 bkgd readings < 8cpm alpha (0,0,4) -lectra

SURVEY RESULTS

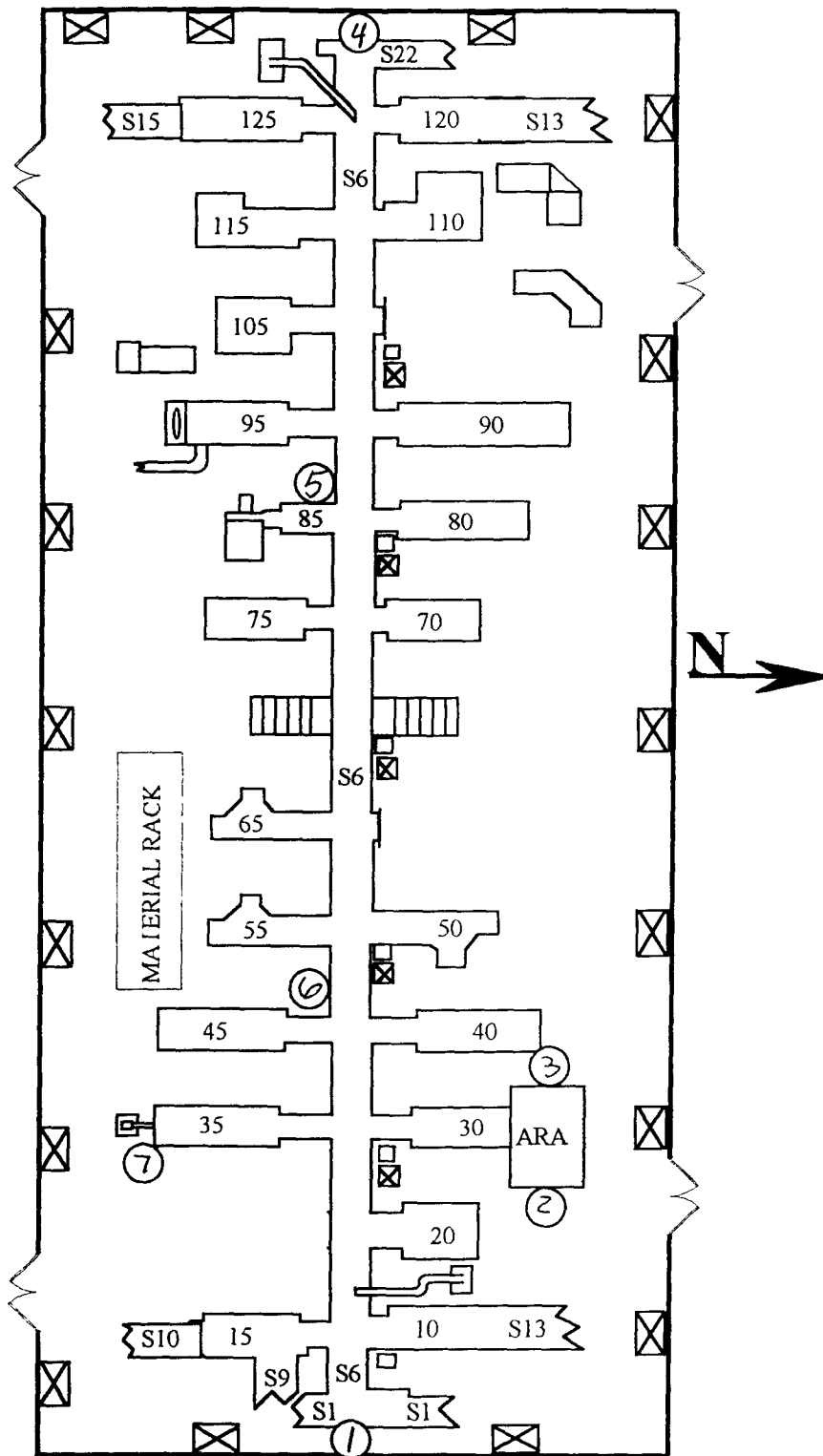
Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Crit Drain	0	-40	6	16				
2	Floor	0	52	54	17				
3	Floor	0	-44	18	18				
4	Crit Drain	0	-4	12	19				
5	Floor	3	28	12	20				
6	Floor	0	-20	30	21				
7	Floor	0	16	6	22				
8	END OF SURVEY				23	N/A			
9					24				
10					25				
11	N/A				26				
12					27				
13					28				
14					29				
15					30				

Date Reviewed: 3-14-00 RS Supervision

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE D



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1389</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>2.30 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.77%</u>
MDA <u>11.5 dpm</u>	MDA <u>12.9 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u> </u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u> </u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>N/A</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u> </u>
Bkg <u>51 cpm</u>	Bkg <u>63 cpm</u>	Bkg <u> </u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u> </u>
MDA <u>109.4 dpm</u>	MDA <u>120.4 dpm</u>	MDA <u> </u>

Survey Type Contamination

Building 707
 Location D-mod Survey Area P
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 3-9-00 Time 1500

Comments Ceiling / Walls > 2 meters Biased survey points

1 minute pats and swipes See map for locations

3 background readings alpha = 8cpm (1,3,3) electra

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1.	WALLS	0	12	18.0	16	WALLS	0	12	12.0
2	"	0	(28)	54.0	17	"	3	(20)	30.0
3	"	0	(40)	30.0	18	"	3	8	18.0
4	"	0	0	60.0	19	"	3	(12)	12.0
5	"	3	(12.0)	18.0	20	"	0	(36)	6.0
6	"	0	(48)	18.0	21	"	0	(32)	(6.0)
7.	"	0	(28)	(12.0)	22	"	0	(20)	6.0
8	"	0	(12)	12.0	23	"	0	(20)	18.0
9	"	3	(24)	6.0	24	OVERHEAD	3	(12)	18.0
10	"	0	(20)	24.0	25	"	0	36	6.0
11	"	0	(32)	(6.0)	26	"	0	12	48.0
12	"	0	12	6.0	27	"	0	(24)	(6.0)
13.	"	3	8	(6.0)	28	"	3	8	36.0
14	"	0	24	36.0	29	"	3	(36)	24.0
15.	"	0	(12)	12.0	30	"	0	8	42.0

Date Reviewed: 3-14-00 RS Supervision:

Print Name

Signature

Emp #

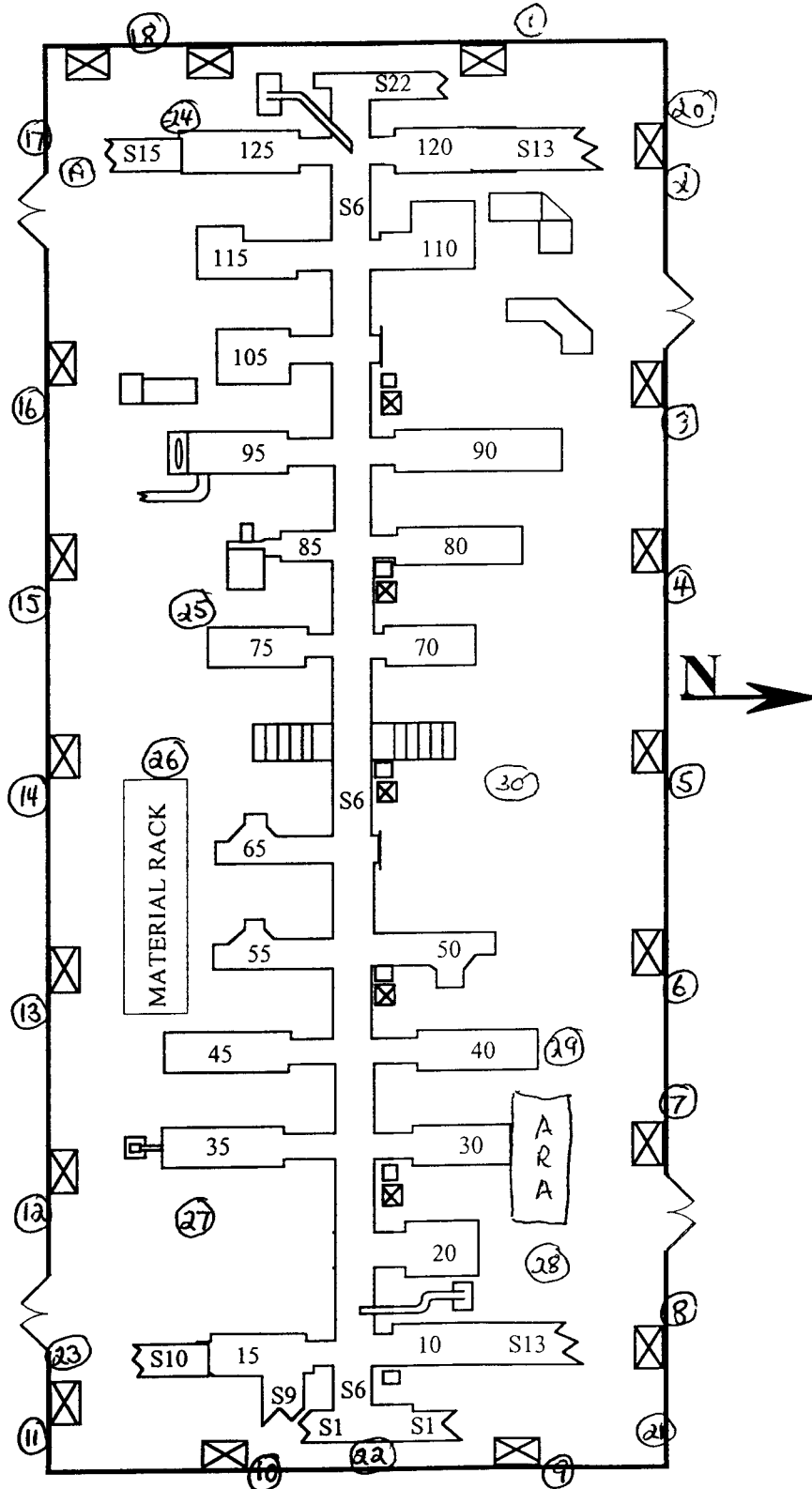
RADIOLOGICAL - 1997

Drawing Showing Survey Points

ceiling/walls > 2 meters

30 biased points

MODULE D



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3265</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.0 cpm</u>	Bkg <u>0.5 cpm</u>	Bkg <u>0.30 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.01%</u>
MDA <u>8.2 DPM</u>	MDA <u>16.6 DPM</u>	MDA <u>94 DPM</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u> </u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u> </u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>N/A</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>A</u>
Bkg <u>61 cpm</u>	Bkg <u>52 cpm</u>	Bkg <u> </u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u> </u>
MDA <u>118.6 DPM</u>	MDA <u>110.4 DPM</u>	MDA <u> </u>

Survey Type Contamination

Building 707

Location D-mov Survey Area P

Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 3-10-00 Time 1500

Comments Equipment Biased survey points

1 minute pats and swipes See map for locations

3 background counts alpha <8cpm (0,3,7) electra

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	EXHAUST DUCT	0	(16)	162.0	16	GB	0	36	48.0
2	" "	0	(24)	144.0	17	BAG OUT (0012)	6	(48)	(60)
3	" "	0	(24)	120.0	18	GB	39	(8)	582.0
4	" "	0	12	276.0	19	GB - SAMPLE PORT	3	(12)	54.0
5	" "	0	36	180.0	20	GB	0	(4)	(6.0)
6	" "	0	(4)	102.0	21	BAG OUT (0016)	3	4	30.0
7	" "	0	8	270.0	22	BAG OUT (0012)	3	48	12.0
8	" "	0	8	102.0	23	GB	0	(16)	6.0
9	" "	0	12	90.0	24	GB	0	76	1818.
10	" "	0	(48)	304.0	25	GB	6	48	81K
11	" "	0	24	60.0	26	GB	0	8	12.0
12	" "	3	32	60.0	27	GB	3	(16)	96.0
13	BAG OUT (0220)	3	8	30.0	28	GB	6	(32)	42.0
14	GB	6	4	6.0	29	GB	3	(24)	1560.
15	BAG OUT	0	(20)	72.0	30	BAG OUT (0183E)	6	72	72.0

Date Reviewed 3-14-00 RS Supervision. [REDACTED]

34d

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

wipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	GB	0	(36)	(6.0)	61				
32	GB	0	0	894.0	62				
33	GB	30	52	9.7K	63				
34	GB	3	(40)	18.0	64				
35	GB	0	(16)	6.0	65				
36	OVERHEAD PIPING	0	8	6.0	66				
37.	"	3	(24)	12.0	67				
38	"	0	4	6.0	68				
39	"	0	8	36.0	69				
40.	"	0	(12)	12.0	70				
41	END OF SURVEY				71				
42					72				
43.					73				
44					74				
45.					75				
46					76	N/A			
47					77				
48					78				
49.					79				
50	N/A				80				
51					81				
52					82				
53					83				
54.					84				
55					85				
56.					86				
57.					87				
58.					88				
59.					89				
60.					90.				

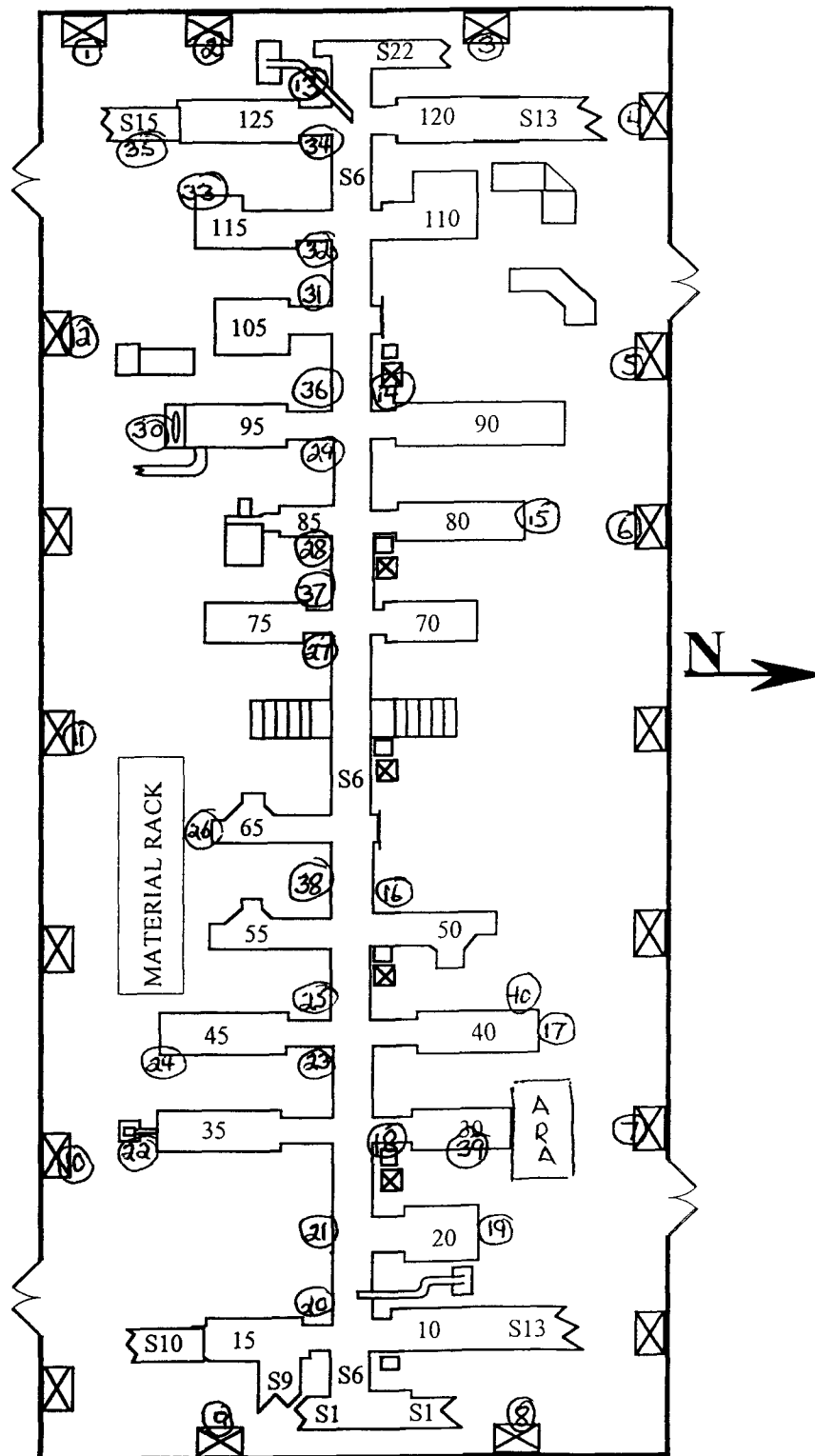
Rev 05/98

362

Equipment

40 biased points

MODULE D



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1245</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>3.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>22.36%</u>
MDA <u>115 dpm</u>	MDA <u>148 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u></u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>N/A</u>
Bkg <u>47 cpm</u>	Bkg <u>44 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>105.5 dpm</u>	MDA <u>103.4 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location Module D Survey Area P
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 3-6-00 Time 1600

Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Unbiased survey points
1 m² scans, 1 minute pats and swipes See map for locations
3 bkgd Counts alpha = 8cpm electra (1,4,5)

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Floor	0	8	12	16	Floor	0	64	48
2	Floor	0	28	18	17	Floor	0	44	12
3	Floor	0	-4	21	18	Floor	0	-24	12
4	Floor	0	56	18	19	Floor	0	32	6
5	Floor	0	4	36	20	Floor	0	32	12
6	Floor	3	0	18	21	Floor	3	24	12
7	Floor	0	88	30	22	Floor	3	16	24
8	Floor	0	92	24	23	Floor	3	-8	-6
9	Floor	3	20	90	24	Floor	0	12	324
10	Floor	0	-12	60	25	Floor	0	36	0
11	Floor	3	32	6	26	Floor	0	68	6
12	Floor	0	-12	32 48	27	Floor	0	-24	-12
13	Floor	0	32	24	28	Floor	0	24	-12
14	Floor	0	40	12	29	Floor	0	44	6
15	Floor	0	88	66	30	Floor	0	4	12

Date Reviewed 3-14-00 RS Supervisor

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	Floor	0	24	12	61				
32	Floor	0	32	6	62				
33	Floor	0	64	6	63				
34	Wall	3	40	18	64				
35	Wall	0	44	-6	65				
36	Wall	0	36	0	66				
37	Wall	3	100	12	67				
38	Wall	3	28	12	68				
39	Wall	0	32	-6	69				
40	Wall	3	16	6	70				
41	Wall	0	76	6	71				
42	Wall	0	8	12	72				
43	Wall	0	4	6	73				
44	Wall	0	4	-12	74				
45	Wall	0	-60	30	75	N/A			
46	End of Survey				76				
47					77				
48					78				
49					79				
50					80				
51					81				
52					82				
53	N/A				83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

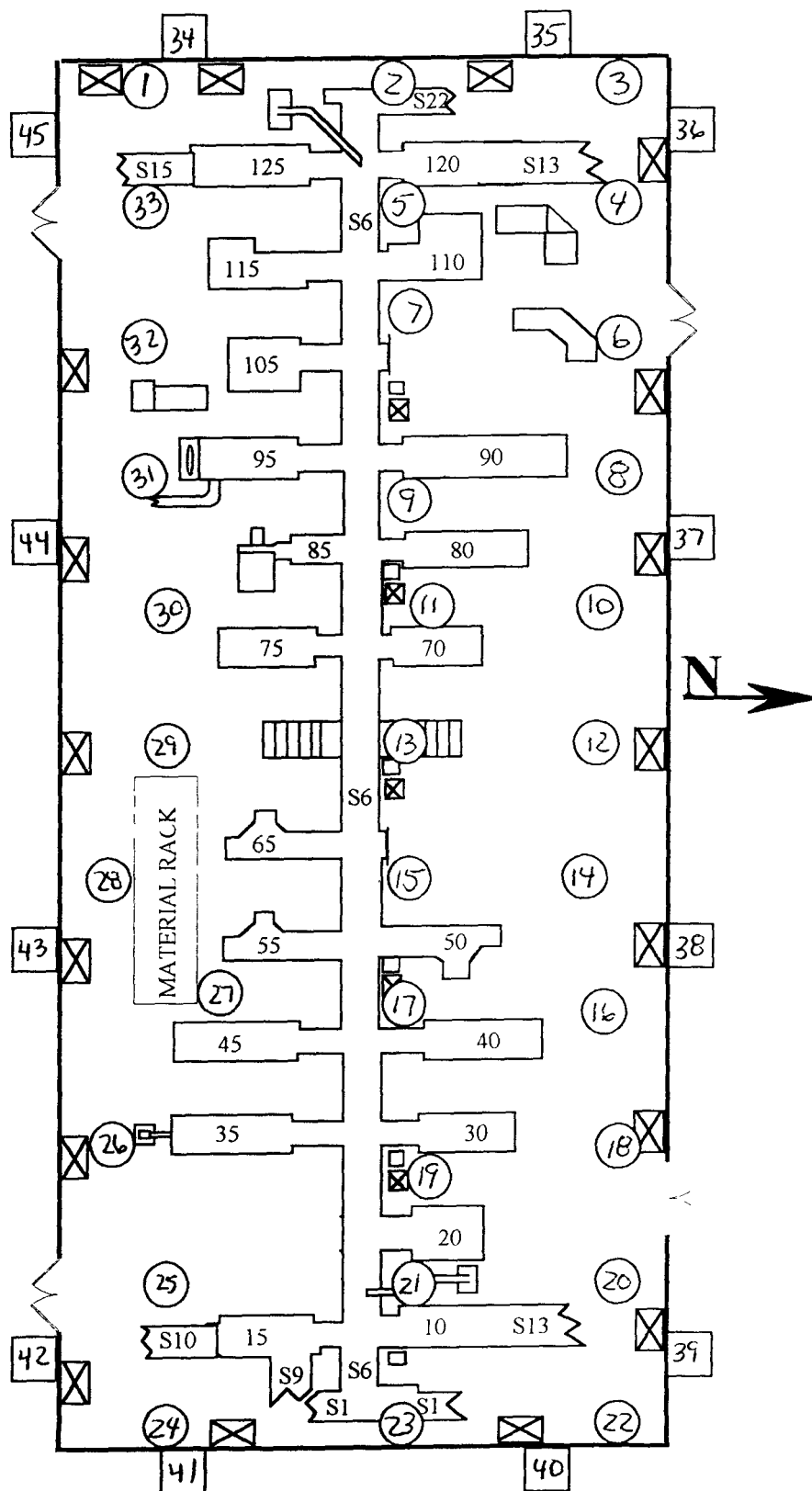
oor / Walls <2meters unbiased

2 wall

33 floor

45 total points

MODULE D

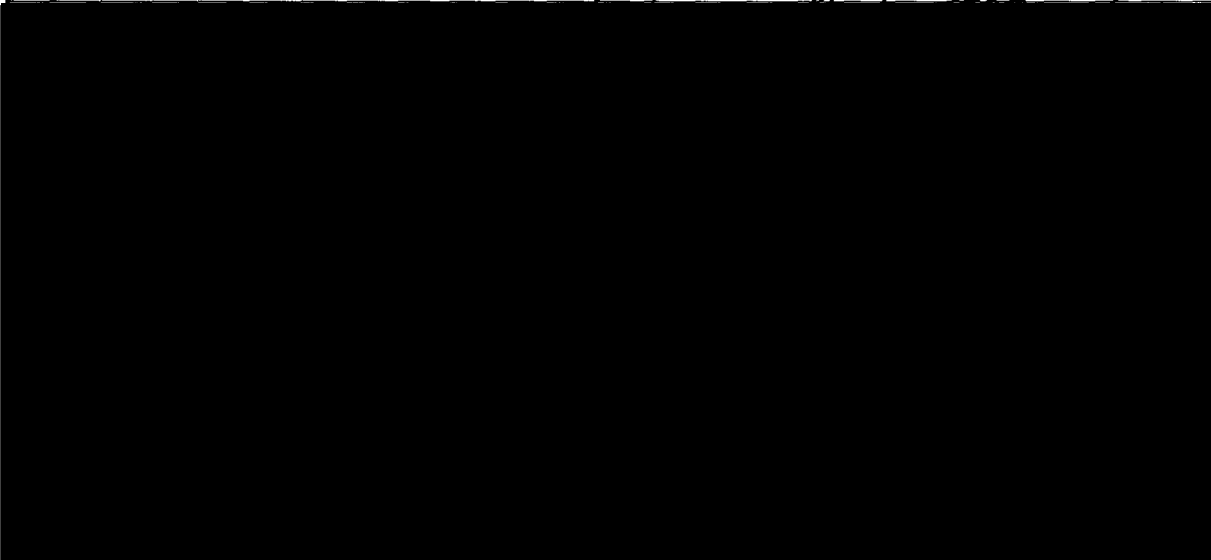


[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area Q		Survey Unit N/A		Area (m ²) 634	
Survey Unit Description INSIDE OF MODULE E (ROOM 120)					
Survey Type RLC Survey X FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
45	37	40	4	0	52
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707
Survey Area: Q	Survey Unit: N/A
Survey Unit Description: INSIDE OF MODULE E (ROOM 120) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation: 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707
Survey Area: Q		Survey Unit: N/A
Survey Unit Description: INSIDE OF MODULE E (ROOM 120) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>45 <u>unbiased</u> survey points uniformly distributed throughout the room</p> <p>7 <u>biased</u> survey points at the following locations</p> <ul style="list-style-type: none"> - 5 points around floors adjacent to contained contamination areas (where accessible) - 2 points near criticality drain locations <p>CEILINGS/WALLS > 2 meters</p> <p>30 <u>biased</u> surveys (15 wall, 15 ceiling) with focus on following areas of room</p> <ul style="list-style-type: none"> - Walls behind process lines - Ceilings above GB's - Ceilings/walls adjacent to c-cells/tents - Stained or discolored areas - Walls/ceilings near GB's mounted high on walls - Areas around pipe or other penetrations <p>EQUIPMENT</p> <p>40 <u>biased</u> survey points on equipment with one or more samples from</p> <ul style="list-style-type: none"> - Each GB "section" extending from the main (center) GB lines - Gloveboxes which have visible leaks or contained spills beneath them - 2 surveys points at each of 5 room exhaust ducts - Bag-in/bag out ports to GB lines - 5 survey points on top of overhead piping (where locations are accessible through reach tools) 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707
Survey Area: Q		Survey Unit N/A
Survey Unit Description. INSIDE OF MODULE E (ROOM 120) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 52 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 4 biased (paint) media samples taken as follows: <ul style="list-style-type: none"> - 1 sample near one of the entrances to the module - 1 sample around a posted HCA - 1 sample beneath a process GB - 1 sample near a criticality drain 	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Pg superseded 01/18/00 by Chg #2

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: Q	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE E (ROOM 120) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media "</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: Q	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE E (ROOM 120) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

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Pg superseded 01/18/00 JF Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID. 99-0002	Building 707
Survey Area: Q	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE E (ROOM 120) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02. Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering. Survey forms shall be marked "N/A" where beta measurements are not collected. 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: Q	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE E (ROOM 120) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 707	
Survey Area: Q		Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys		1	db
Total Activity Surveys		1	db
Exposure Rate Surveys		NA	NA
Removable Surveys		1	db
Media Samples		Q28	EDM
Volumetric Samples		NA	NA
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys		1	db
Total Activity Surveys		1	db
Exposure Rate Surveys		NA	NA
Removable Surveys		1	db
Media Samples		Q28	EDM
Volumetric Samples		NA	NA
Comments			

RADIATION MONITORING IN NUCLEAR TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP # _____

Date _____

Time _____

RCT _____

Print name _____

Signature _____

Emp # _____

RCT _____

Print name _____

Signature _____

Emp # _____

PRL #: _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1 _____	_____	_____	_____	26 _____	_____	_____	_____
2 _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33 _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

Date Reviewed: _____

RS Supervision: _____

Print Name _____

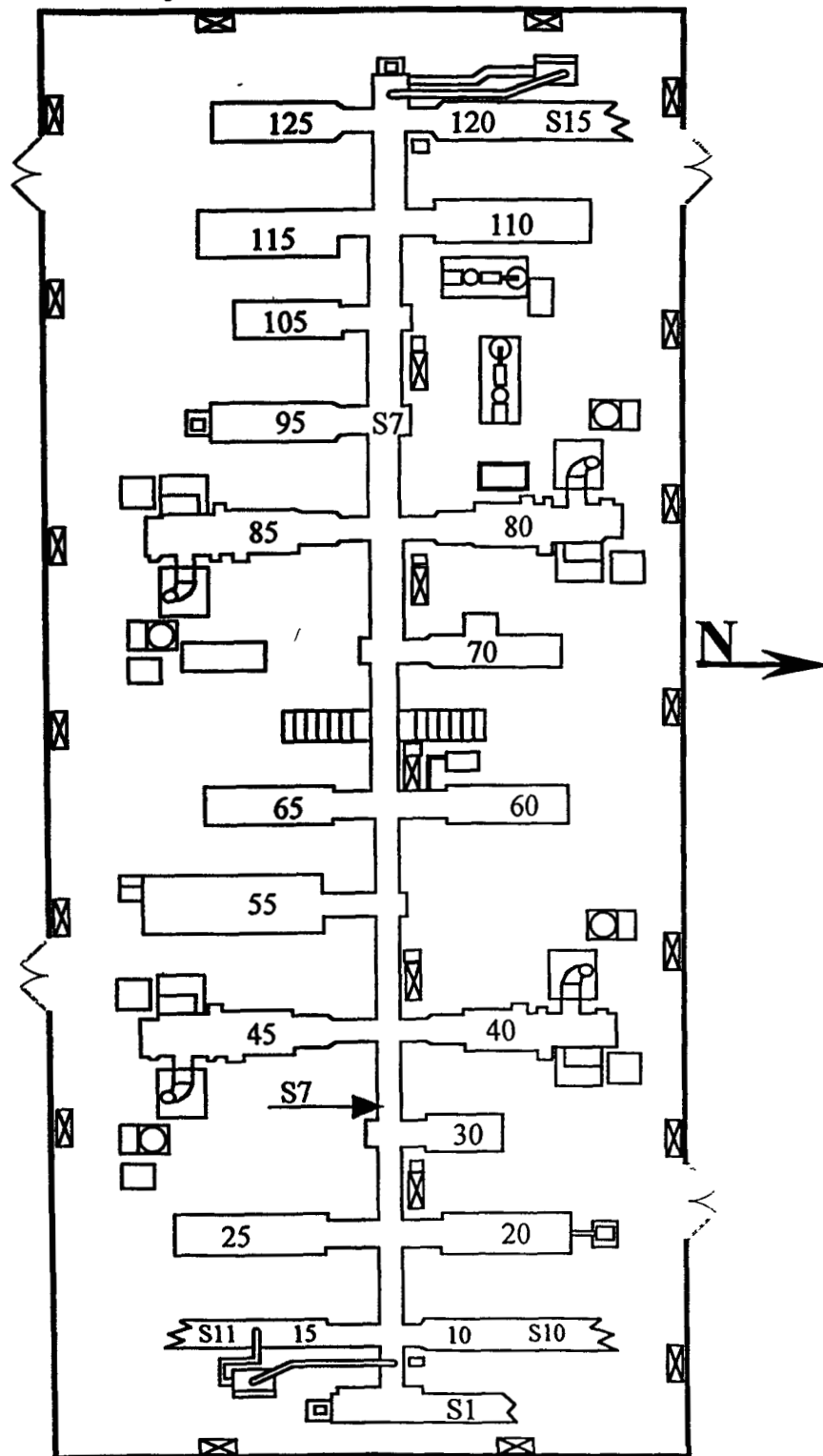
Signature _____

Emp # _____

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE E



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1518</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>3.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.86</u>
MDA <u>11.5 dpm</u>	MDA <u>12.9 dpm</u>	MDA <u>49.3 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u></u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u></u>
Bkg <u>51 cpm</u>	Bkg <u>63 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>109.4 dpm</u>	MDA <u>120.4 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location MODULE E Survey Area Q
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 3-9-00 Time 1400

RCT _____
 Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Unbiased survey points1 m² scans, 1 minute pats and swipes See map for locationsThree Background Counts in Module = 3cpm, 1cpm, 4cpm electra
(Alpha)**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	W	0	8	18	16	F	0	-24	0
2	F	3	-40	12	17	F	0	20	18
3	W	0	18	12	18	F	0	-20	-6
4	F	0	-28	24	19	W	0	-4	18
5	F	6	24	-6	20	F	0	0	0
6	F	6	4	0	21	F	0	40	6
7	F	0	44	36	22	F	0	-76	78
8	F	0	-96	0	23	F	3	40	12
9	F	0	16	-6	24	W	0	24	24
10	F	0	-15	6	25	F	0	4	30
11	F	0	36	12	26	F	0	-40	18
12	W	0	-20	6	27	W	0	20	12
13	F	0	24	6	28	F	0	40	18
14	F	0	-60	12	29	W	0	-4	-6
15	F	0	25	60	30	F	2	26	14

Date Reviewed: 3-10-00 RS Supervisor

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY****Drawing Showing Survey Points**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	W	0	-68	36	61				
32	F	3	40	-6	62				
33	F	0	-64	24	63				
34	F	0	44	24	64				
35	W	0	-40	6	65				
36	F	0	-12	18	66				
37	F	0	-28	30	67				
38	F	3	16	18	68				
39	W	0	44	0	69				
40	F	0	16	120	70				
41	F	0	-52	6	71				
42	F	0	56	6	72				
43	W	3	-32	6	73				
44	F	0	52	42	74				
45	W	0	-56	18	75				
46	END OF SURVEY				76				
47					77				
48					75				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

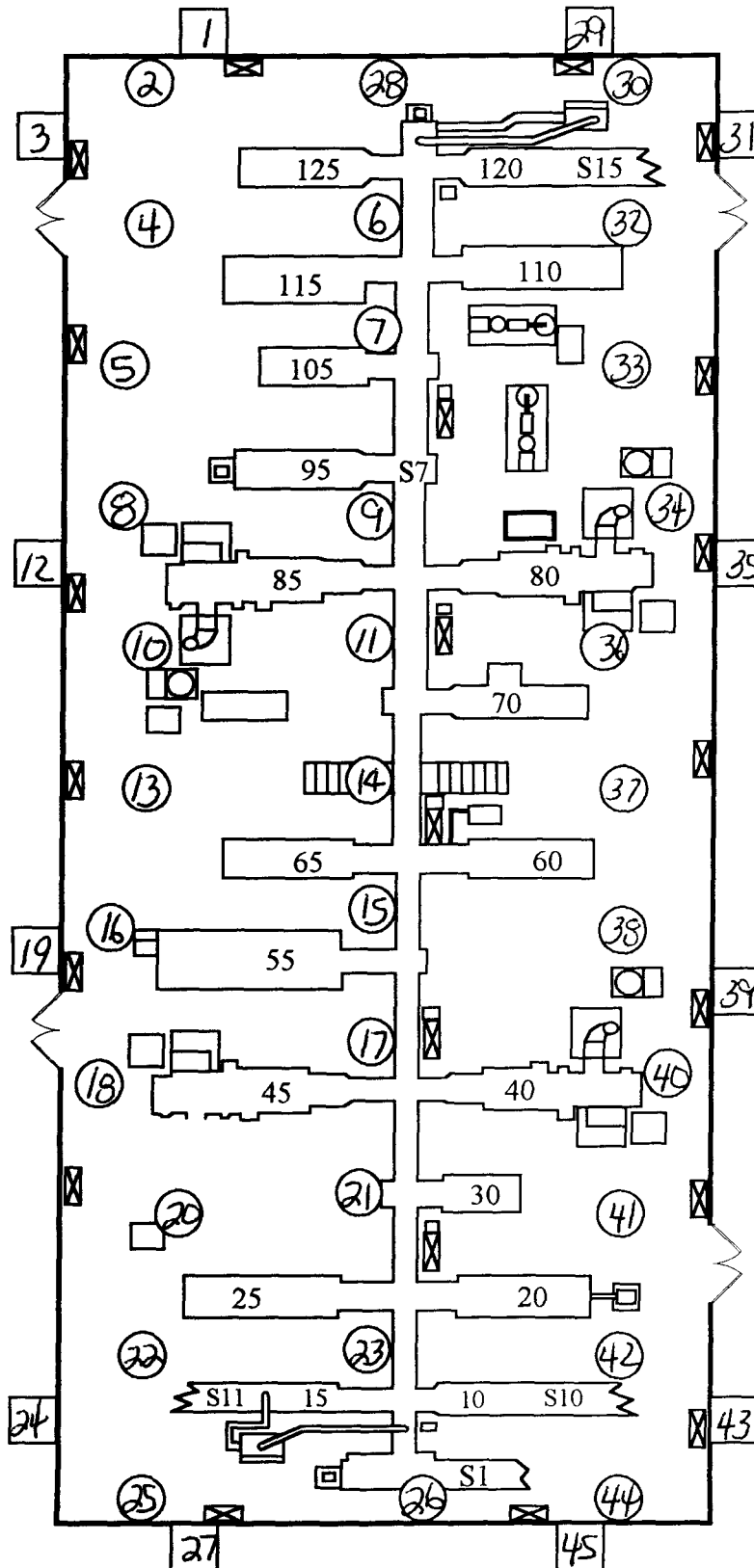
Drawing Showing Survey Points

Door / Walls <2meters unbiased

12 wall

33 floor

45 total points

MODULE E

N →

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>320</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>4-26-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>11.5 dpm</u>	MDA <u>12.9 dpm</u>	MDA <u>74 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u></u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>N/A</u>
Bkg <u>51 cpm</u>	Bkg <u>53 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>1094 dpm</u>	MDA <u>1113 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location Module E Survey Area C2
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204
 Date 3-9-00 Time 1630

RCT N/A
 Print name N/A Signature / Emp #

Comments Floor / Walls < 2 meters Biased survey points
1 m² scans, 1 minute pats and swipes See map for locations

3 bkgd counts < 8cpm alpha (2,2,5) - Electra

No Contained Contam areas (but SSC's) - so took more readings by outside

SURVEY RESULTS

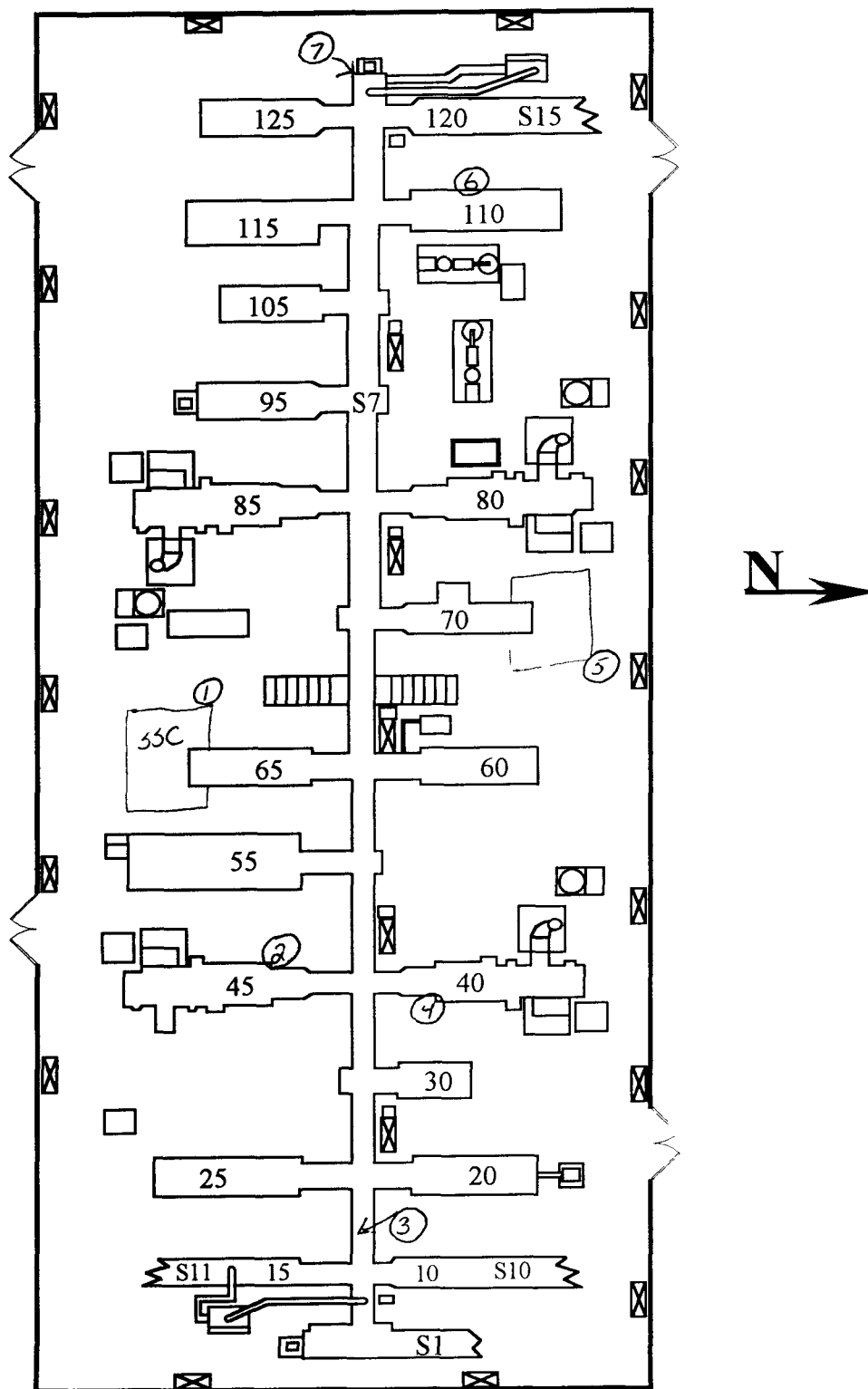
Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Floor by SSC (E-65)	0	88	66	16				
2	F crit drain E-45	0	32	108	17				
3	F crit drain centerline	6	-32	102	18				
4	F crit drain E-40	0	-24	78	19				
5	Floor by SSC (E-70)	0	-16	12	20				
6	F crit drain E-110	3	-12	36	21				
7	F crit drain centerline	0	4	12	22				
8	END OF SURVEY				23	N/A			
9					24				
10					25				
11					26				
12	N/A				27				
13					28				
14					29				
15					30				

Date Reviewed: 3-14-00 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

Floors/walls < 2 m Biased

MODULE E

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3120</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>4-26-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>115 dpm</u>	MDA <u>129 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u></u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>N/A</u>
Bkg <u>51 cpm</u>	Bkg <u>53 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>1094 dpm</u>	MDA <u>1113 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location Module E Survey Area ☒
 Purpose Reconnaissance Level Characterization

RWP # 00-707 1204Date 3-9-00 Time 1630

RCT N/A
 Print name Signature / Emp #

Comments Equipment Biased survey points

1 minute pats and swipes See map for locations

3 bkgd Counts alpha <8cpm (1,1,0) electra

overhead pipes too difficult to access NO survey points in overhead

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	E-125 port 214	0	-8	48	16	E-45	0	-32	78
2	E-125 port 216	3	-28	18	17	centerline Port	0	24	132
3	E-125	0	-20	600	18	E-25 port 430	195	0	498
4	E-115 port 231	3	12	54	19	E-25 port 432	3	64	132
5	E-115 port 239	0	60	36	20	E-25 tool/drop	0	4	102
6	E-115 port 246	0	76	42	21	E-15	9	48	102
7	E-105 connect to centerline	27	12	7536	22	S-1 tool/drop	6	-40	54
8	E-95 port 285	3	76	72	23	E-10	6	16	108
9	E-95 tool/drop	0	24	42	24	E-20 Bag Port	0	20	138
10	E-85 Pump	0	-16	24	25	E-20 connect	0	80	486
11	E-85 port 336	0	48	66	26	E-30 tool/drop	3	-16	90
12	E-65 tool/drop	0	20	96	27	E-40	0	56	390
13	E-65	0	-12	66	28	E-60	3	12	96
14	E-55 connect	0	56	126	29	E-70	0	44	36
15	E-45 port 411	6	-28	96	30	E-80 port 182	0	-12	30

Date Reviewed: 3-14-00 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

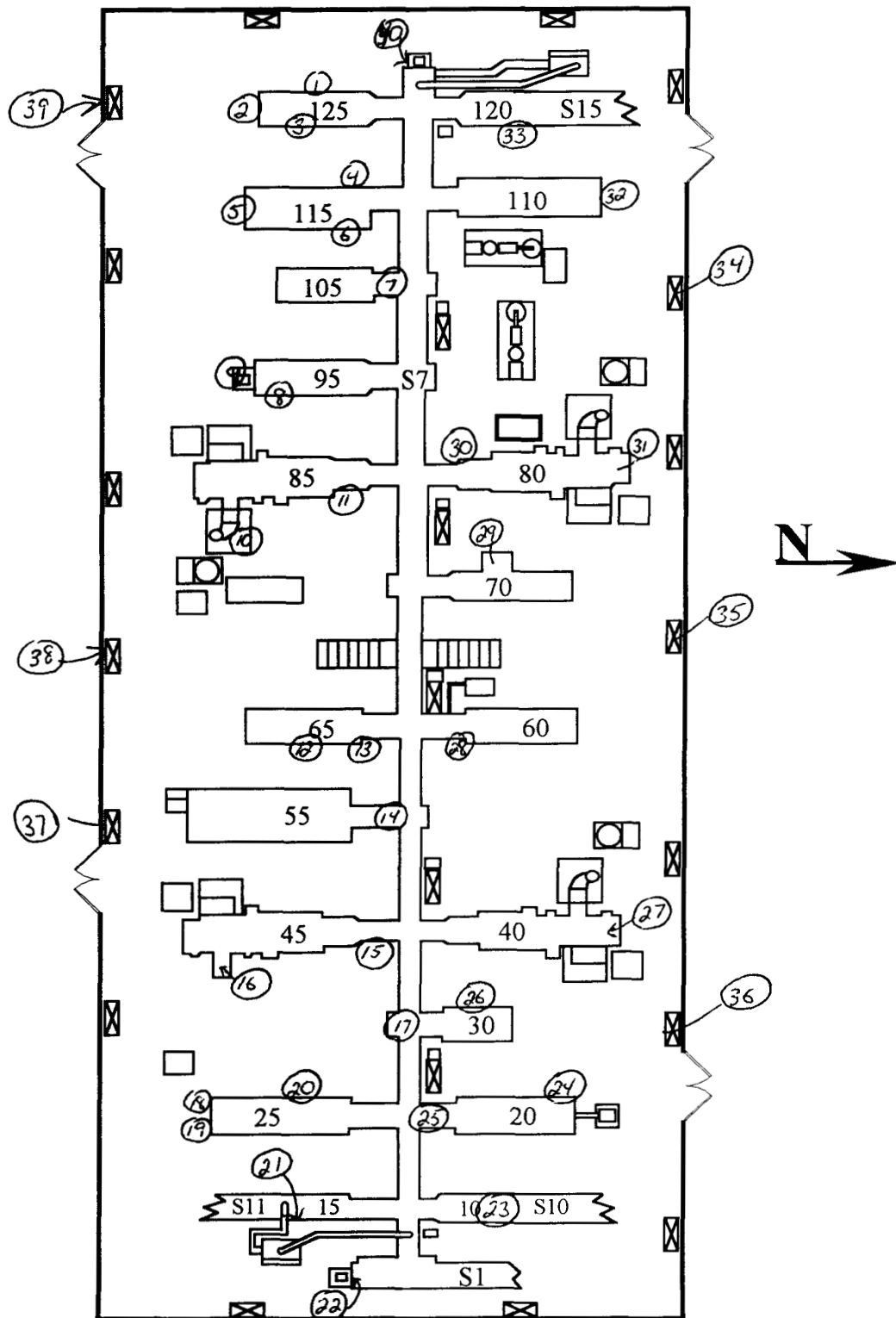
Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	E-80	0	20	36	61				
32	E-110 Bag Port	0	-8	36	62				
33	E-120 port 197	12	40	96	63				
34	Vent	6	32	60	64				
35	Vent	3	52	108	65				
36	Vent	3	12	390	66				
37	Vent	18	8	174	67				
38	Vent	3	0	156	68				
39	Vent	0	48	24	69				
40.	crit drain Pipe	0	16	48	70				
41	End of survey				71				
42					72				
43.					73				
44.					74	N/A			
45					75				
46.					76				
47.					77				
48					75				
49					79				
50.	N/A				80				
51					81				
52					82				
53.					83				
54.					84				
55					85				
56					86				
57.					87				
58					88				
59.					89				
60.					90				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

MODULE E

Equipment



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # 837	Serial # 1233
Cal Due 4-10-00	Cal Due 5-17-00	Cal Due 5-11-00
Bkg 0.1 cpm	Bkg 0.0 cpm	Bkg 20 cpm
Efficiency 33%	Efficiency 33%	Efficiency 20.63%
MDA 11.5 dpm	MDA 8.2 dpm	MDA 94 dpm
Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model BC-4	Model
Serial # 872	Serial # 833	Serial #
Cal Due 4-12-00	Cal Due 7-14-00	Cal Due N/A
Bkg 58 cpm	Bkg 52 cpm	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA 116.0 dpm	MDA 110.4 dpm	MDA

Survey Type Contamination

Building 707
 Location Module E Survey Area Q
 Purpose Reconnaissance Level Characterization
 RWP # 00-707-1204
 Date 3-8-00 Time 1630

Comments Ceiling / Walls > 2 meters Biased survey points

1 minute pats and swipes See map for locations

3 background counts alpha < 8cpm (4,4,5) electra
surveys below ceiling tiles

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1.	wall	0	4	6	16	Ceiling	3	48	18
2	wall	0	0	18	17	Ceiling	0	-32	30
3.	wall	0	8	30	18	Ceiling	0	36	18
4.	wall	3	60	42	19	Ceiling	0	-24	24
5	wall	0	-16	48	20	Ceiling	0	-32	24
6	wall	0	-4	12	21	Ceiling	0	-32	18
7	wall	0	12	30	22	Ceiling	0	-12	12
8	wall	0	12	24	23	Ceiling	0	-8	0
9	wall	0	-28	6	24	Ceiling	3	-20	24
10.	wall	0	-8	6	25	Ceiling	0	32	18
11	wall	3	-36	6	26	Ceiling	0	0	30
12	wall	0	-12	12	27	Ceiling	0	0	30
13	wall	0	4	12	28	Ceiling	3	-4	60
14	wall	3	-24	18	29	Ceiling	3	-52	36
15	wall	0	32	6	30	Ceiling	0	28	6

Date Reviewed: 3-14-00 RS Supervision:

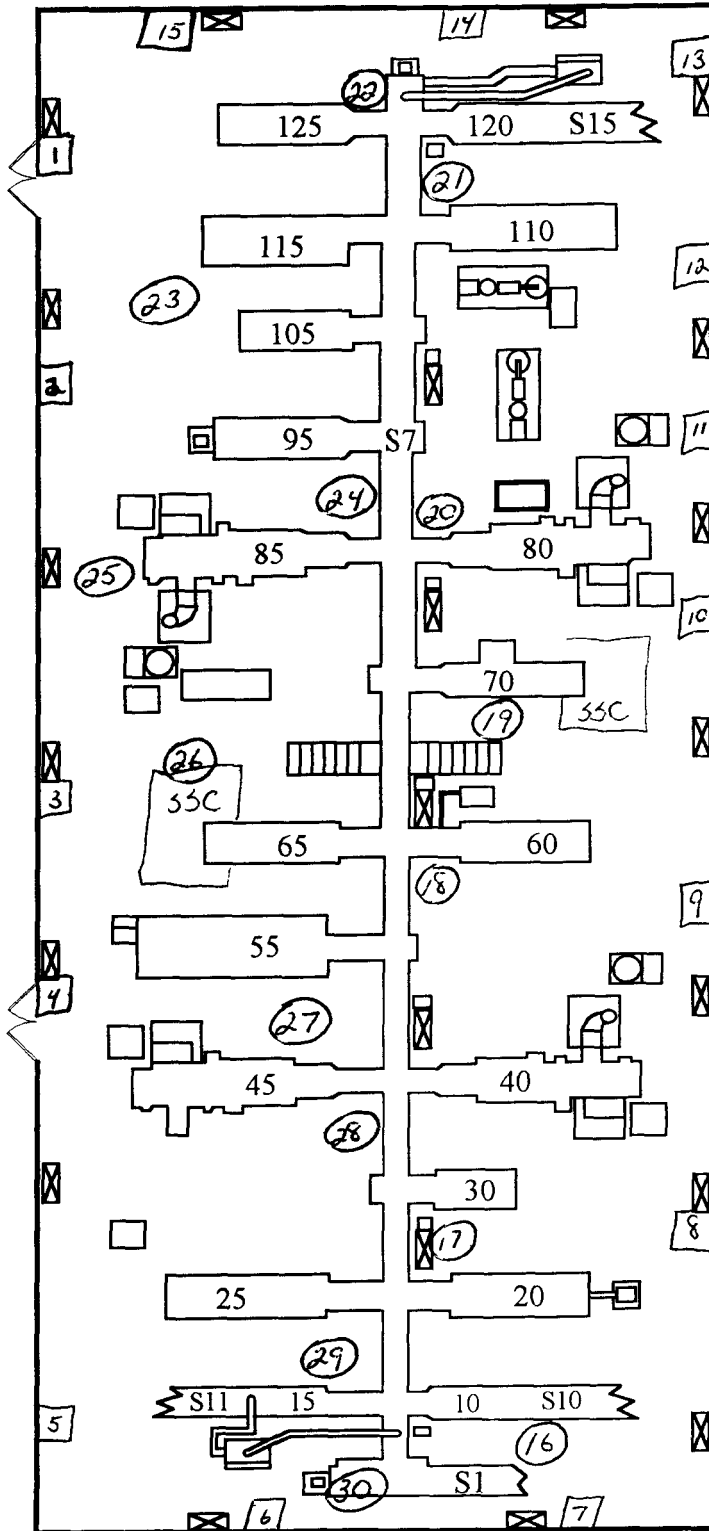
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Ceilings + walls >2m

MODULE E



[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area R		Survey Unit N/A		Area (m ²) 537	
Survey Unit Description INSIDE OF MODULE F, INCLUDING ROOMS 125, 126, 127 EXCLUDES ROOMS 125A, AND 125B DUE TO POSTING AS HCA/ARA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS					
Survey Type			Classification		
RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
45	42	30	3	0	57
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707
Survey Area: R	Survey Unit: N/A
Survey Unit Description: INSIDE OF MODULE F, INCLUDING ROOMS 125, 126, 127 EXCLUDES ROOMS 125A, AND 125B DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation: <div style="background-color: black; width: 100%; height: 250px; margin-top: 10px;"></div>	
<small>ACSS Manager Printed Name</small>	<small>ACSS Manager Signature</small>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707
Survey Area. R		Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE F, INCLUDING ROOMS 125, 126, 127 EXCLUDES ROOMS 125A, AND 125B DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>45 <u>unbiased</u> survey points uniformly distributed within rooms 125, 126, 127 as follows 19 total in room 126, 7 total in room 127, 19 total in room 125</p> <p>12 <u>biased</u> survey points at the following locations</p> <ul style="list-style-type: none"> - 2 points around floors adjacent to entrances to rooms 125A, 125 B (where accessible) - 2 points near criticality drain locations - 3 points within walled area of room 125 (drum staging/prep area) - 2 points near hood/b-box of room 126 (SE corner) - 3 points behind equipment where floor staining is present <p>CEILINGS/WALLS > 2 meters</p> <p>30 <u>biased</u> surveys (divided evenly between wall and ceiling when possible) with focus on following areas of rooms</p> <ul style="list-style-type: none"> - Walls behind process lines - Ceilings above hoods/B-boxes/hoods - Stained or discolored areas (specific focus on stained areas within room 127) - Areas around pipe or other penetrations <p>EQUIPMENT</p> <p>30 <u>biased</u> survey points on equipment with one or more samples from</p> <ul style="list-style-type: none"> - Hoods/B-boxes which have visible leaks or contained spills beneath them - 2 surveys points at each of 5 room exhaust ducts - Equipment (in/out of service) in room 127 - 5 survey points on top of overhead piping (where locations are accessible through reach tools) – focus on OH piping in room 127 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707
Survey Area: R		Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE F, INCLUDING ROOMS 125, 126, 127 EXCLUDES ROOMS 125A, AND 125B DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 57 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 3 biased (paint) media samples taken as follows: <ul style="list-style-type: none"> - 1 sample near one of the entrances to the module - 1 sample around a criticality drain - 1 sample behind equipment in room 127 along W wall (stained areas) 	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

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277/466

Pg superseded 01/18/00 *Chg #2*

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building: 707
Survey Area: R	Survey Unit: N/A
Survey Unit Description: INSIDE OF MODULE F, INCLUDING ROOMS 125, 126, 127 EXCLUDES ROOMS 125A, AND 125B DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media "</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: R	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE F, INCLUDING ROOMS 125, 126, 127 EXCLUDES ROOMS 125A, AND 125B DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media "</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

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Ag superseded 01/18/00 JY Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: R	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE F, INCLUDING ROOMS 125, 126, 127 EXCLUDES ROOMS 125A, AND 125B DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i e , non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e g , elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and <u>in addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e g , indicate which direction is North) • Other appropriate information (e g , "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building: 707
Survey Area: R	Survey Unit: N/A
Survey Unit Description: INSIDE OF MODULE F, INCLUDING ROOMS 125, 126, 127 EXCLUDES ROOMS 125A, AND 125B DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Building 707	
Survey Area: R	Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/>		
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	1	db
Total Activity Surveys	1	db
Exposure Rate Surveys	NA	NA
Removable Surveys	1	db
Media Samples	221	EM1
Volumetric Samples	NA	NA
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	1	db
Total Activity Surveys	1	db
Exposure Rate Surveys	NA	NA
Removable Surveys	1	db
Media Samples	228	EM1
Volumetric Samples	NA	NA
Comments 		

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____
Model _____	Model _____	Model _____	Building. _____
Serial # _____	Serial # _____	Serial # _____	Location* _____
Cal Due _____	Cal Due _____	Cal Due _____	Purpose: _____
Bkg. _____	Bkg. _____	Bkg. _____	RWP # _____
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____
Mfg. _____	Mfg. _____	Mfg. _____	Print name Signature Emp #
Model _____	Model _____	Model _____	RCT _____ / _____ / _____
Serial # _____	Serial # _____	Serial # _____	Print name Signature Emp #
Cal Due _____	Cal Due _____	Cal Due _____	
Bkg. _____	Bkg. _____	Bkg. _____	
Efficiency _____	Efficiency _____	Efficiency _____	
MDA _____	MDA _____	MDA _____	

PRL #: _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1 _____	_____	_____	_____	26 _____	_____	_____	_____
2 _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33 _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

Date Reviewed: _____

RS Supervision: _____

Print Name

Signature

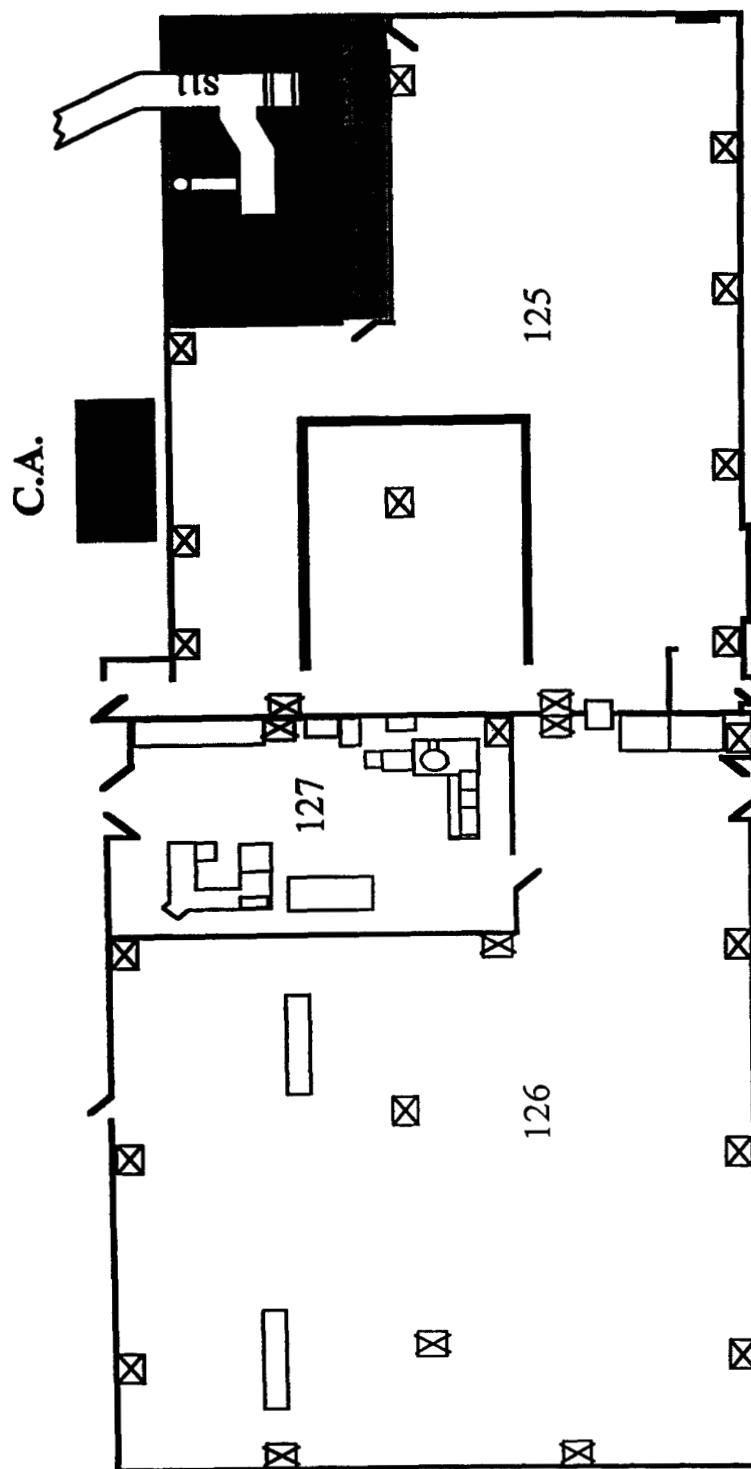
Emp #

NORTH PLANT BUILDING ENVIRONMENTAL TECHNOLOGY SHELTER

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE F



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3260</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-17-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.4 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>199%</u>
MDA <u>11.5 dpm</u>	MDA <u>14.8 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u> </u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u> </u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>NA</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u> </u>
Bkg <u>47 cpm</u>	Bkg <u>44 cpm</u>	Bkg <u> </u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u> </u>
MDA <u>105.5 dpm</u>	MDA <u>102.4 dpm</u>	MDA <u> </u>

Survey Type Contamination

Building 707
 Location F-mod Survey Area R
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 3-6-00 Time 1500

RCT _____
 Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Unbiased survey points1 m² scans, 1 minute pats and swipes See map for locations3 alpha bkgd counts electra < 8cpm (0,2,2)**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F	0	20	12	16	F	0	60	24
2	F	0	20	42	17	F	0	44	48
3	F	0	56	6	18	F	9	-40	24
4	F	0	40	36	19	F	0	-20	30
5	F	0	12	42	20	F	0	80	72
6	F	0	-40	30	21	F	3	4	36
7	F	0	48	24	22	F	0	44	186
8	F	3	36	48	23	F	0	4	72
9	F	3	52	54	24	F	0	48	18
10	F	0	20	30	25	F	0	24	48
11	F	3	-4	12	26	F	0	60	36
12	F	0	-4	12	27	F	0	12	24
13	F	0	-20	18	28	F	0	-12	36
14	F	3	24	36	29	F	0	68	102
15	F	0	20	84	30	F	3	48	48

Date Reviewed: 3-21-00 RS Supervision: _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Swipe #	Location\Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	F	0	4	12	61				
32	F	0	0	48	62				
33	F	0	4	72	63				
34	W > 2	0	12	48	64				
35	W > 2	0	48	18	65				
36	W > 2	3	80	18	66				
37	W > 2	0	24	0	67				
38	W > 2	15	34	24	68				
39	W > 2	0	0	48	69				
40	W > 2	0	88	24	70				
41	W > 2	0	40	30	71				
42	W > 2	0	24	12	72				
43	W > 2	0	20	18	73				
44	W > 2	0	0	12	74				
45	W > 2	0	48	42	75	N/A			
46	END OF SURVEY				76				
47					77				
48					78				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

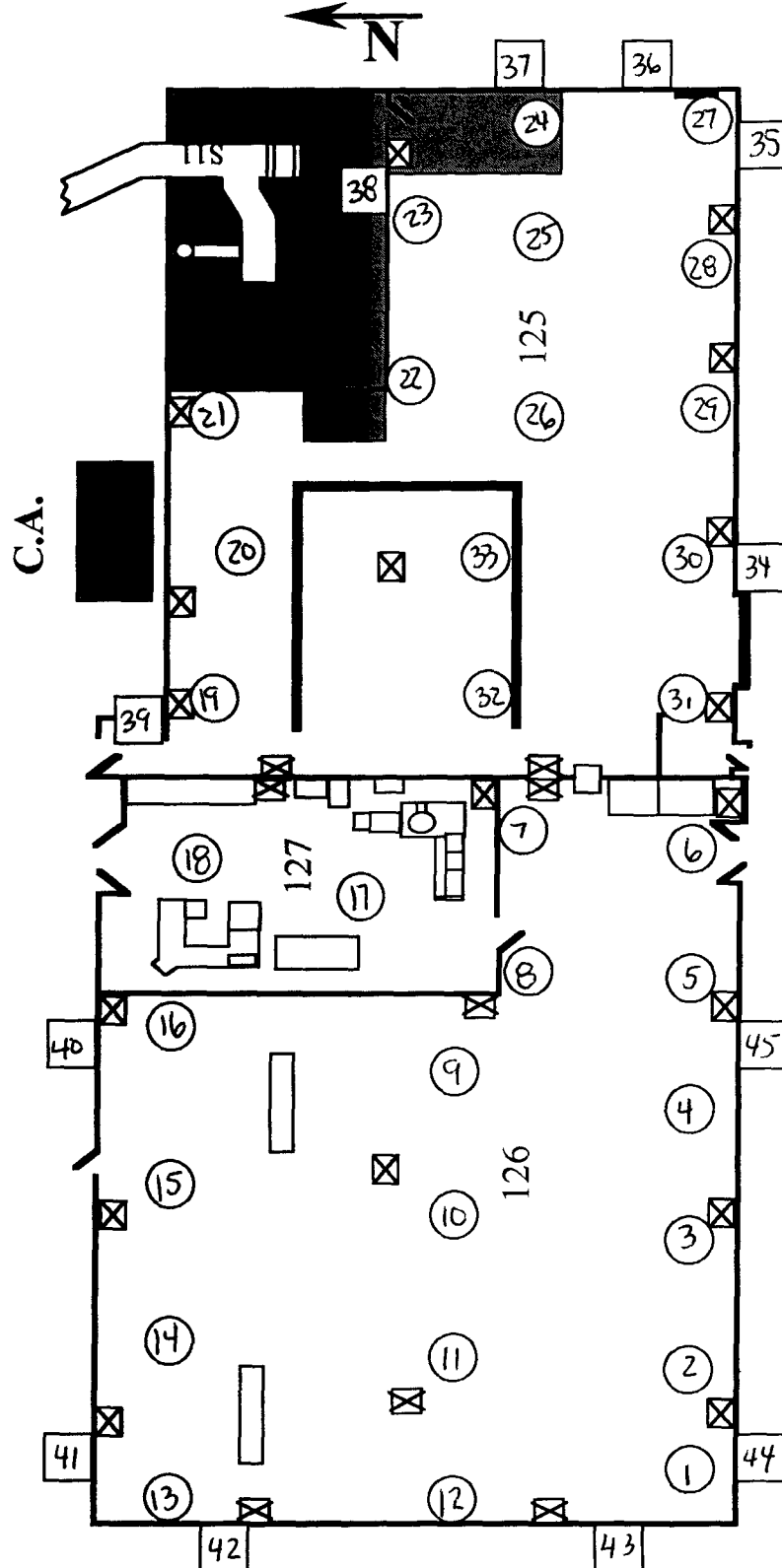
Drawing Showing Survey Points

Floor / Walls <2meters unbiased

12 wall

33 floor

45 total points

MODULE F

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>3265</u>
Cal Due <u>8-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>2 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.01%</u>
MDA <u>11.5 dpm</u>	MDA <u>12.9 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NA</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>959</u>	Serial # <u>833</u>	Serial # <u></u>
Cal Due <u>7-19-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u></u>
Bkg <u>3.5 cpm</u>	Bkg <u>4.3 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>92.5 dpm</u>	MDA <u>101.3 dpm</u>	MDA <u>NA</u>

Survey Type Contamination

Building 707

Location F-mod Survey Area R

Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 5-2-00 Time 1300

RCT NA

Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Unbiased survey points

1 m² scans, 1 minute pats and swipes See map for locations

Additional Point in Rm 127 Per instructions

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Wall	0	28	18	16	NA			
2	Wall	0	16	36	17				
3	Floor	0	4	66	18				
4	Floor	0	40	24	19				
5	Floor	0	32	24	20				
6	END OF SURVEY			NA	21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				
15	NA				30				NA

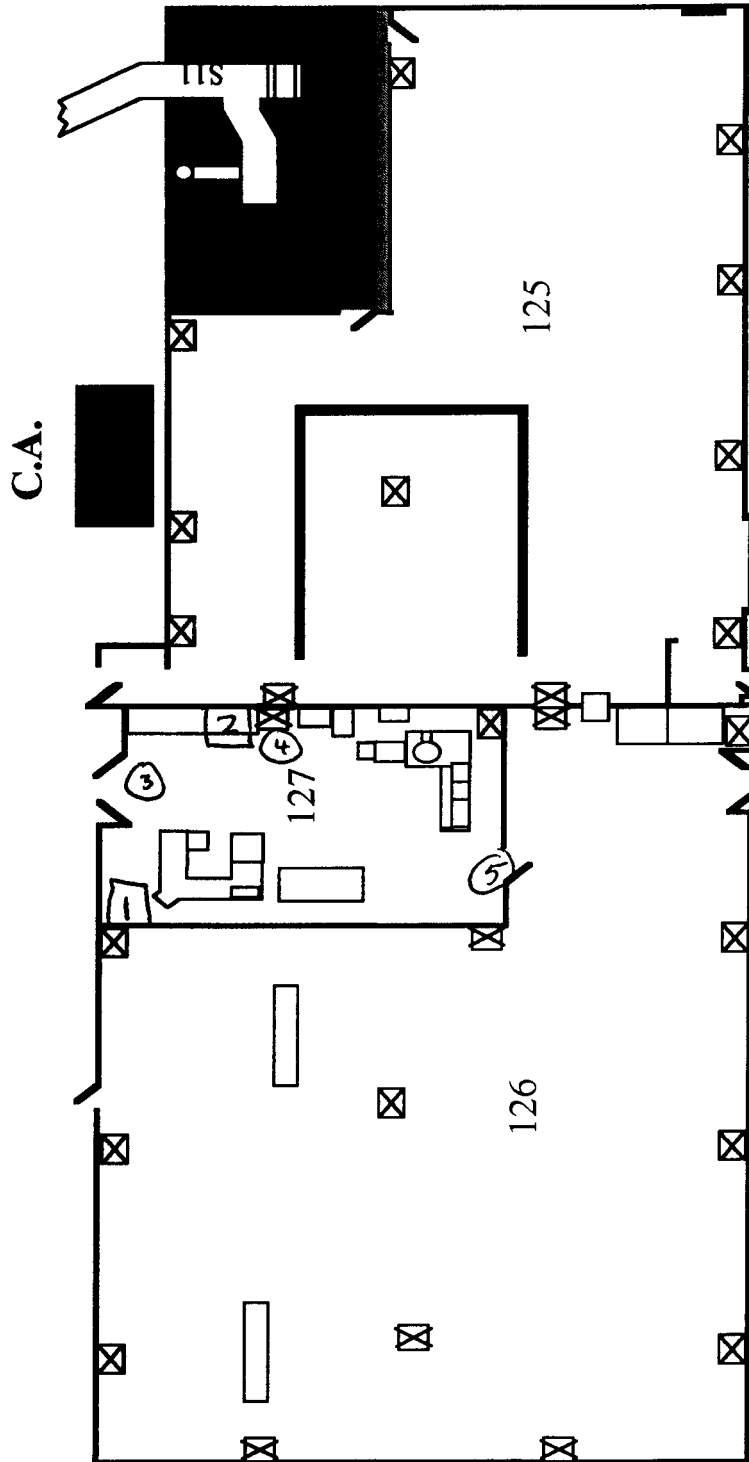
Date Reviewed. 5-2-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE F



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.3 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.63%</u>
MDA <u>129 DPM</u>	MDA <u>13.9 DPM</u>	MDA <u>94 DPM</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>N/A</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>N/A</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>N/A</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>N/A</u>
Bkg <u>52 cpm</u>	Bkg <u>50 cpm</u>	Bkg <u>N/A</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>N/A</u>
MDA <u>110.4 DPM</u>	MDA <u>108.4</u>	MDA <u>N/A</u>

Survey Type Contamination

Building 707
 Location F-mod Survey Area R
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 3-7-00 Time 1400

RCT _____
 Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Biased survey points1 m² scans, 1 minute pats and swipes See map for locations

④ Contained Contamination 600 DPM Removable 3000 DPM Fixed
3 alpha bkgd counts electra < 8cpm (0,0,1)

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	B-Box	3	40	48	16				
2	B-Box	12	36	48	17				
3	Piping	3	68	36	18				
4	82% F	0	32	30	19				
5	F	0	12	24	20				
6	F	6	32	48	21				
7	F	3	12	78	22				
8	F	0	24	312	23				
9	F	6	24	36	24				
10	F	0	4	48	25				
11	F	0	40	54	26				
12	F	0	16	36	27				
13	END OF SURVEY				28				
14	N/A				29				
15					30				

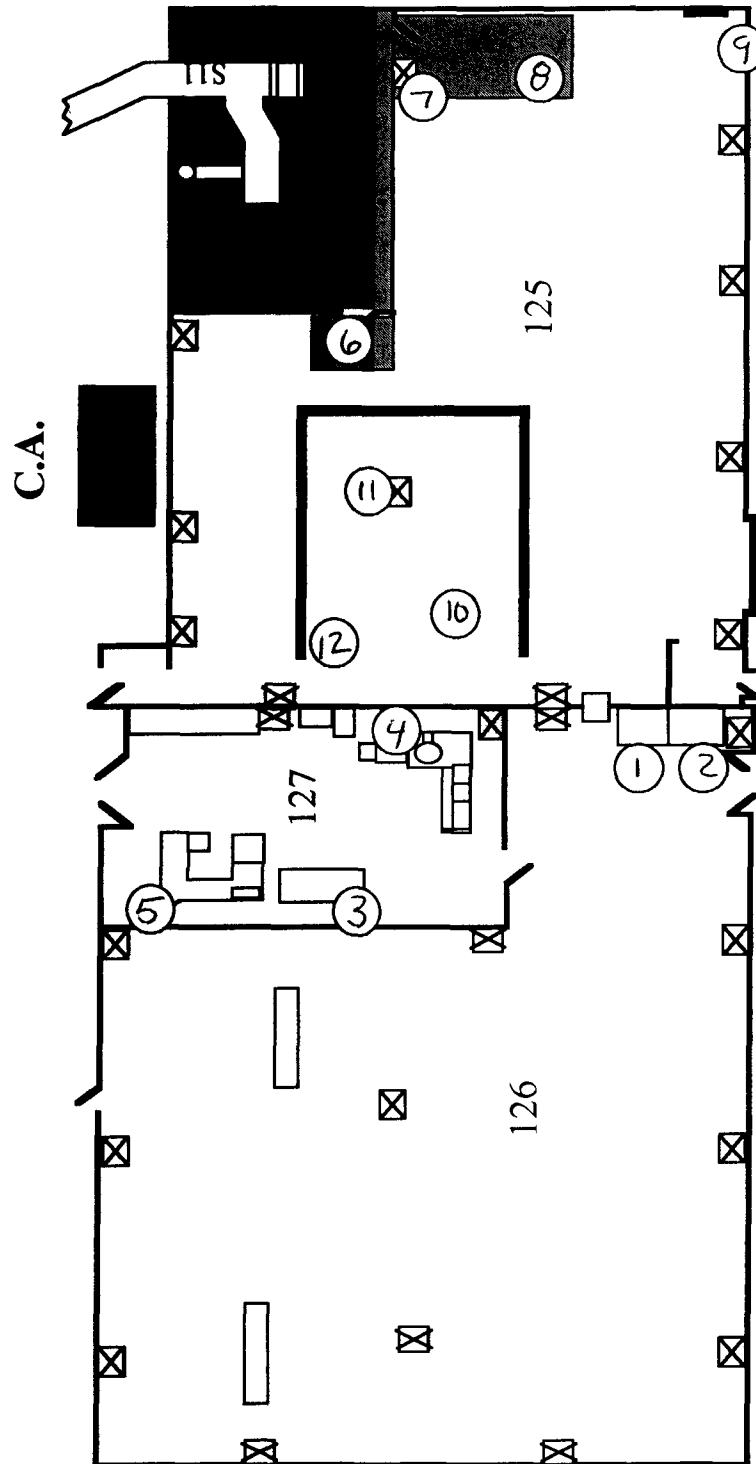
Date Reviewed: 3-21-00 RS Supervisor [REDACTED]

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE F



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA****Survey Type Contamination**

Building 707
 Location F-mod Survey Area R
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204
 Date 3-10-00 Time 1100

RCT Print name / Signature / Emp #

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3260</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-17-00</u>
Bkg <u>0.0 cpm</u>	Bkg <u>0.5 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>199%</u>
MDA <u>8.2 Dpm</u>	MDA <u>15.6 Dpm</u>	MDA <u>94 Dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>Ne Tech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>1233</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>6.1 cpm</u>	Bkg <u>52 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>20.63%</u>
MDA <u>118.6 Dpm</u>	MDA <u>110.4 Dpm</u>	MDA <u>94 Dpm</u>

Comments Equipment Biased survey points

1 minute pats and swipes See map for locations

① - Fixed 2200 Dpm under label - Contained
3 alpha bkg counts electra < 8cpm (2,2,4)

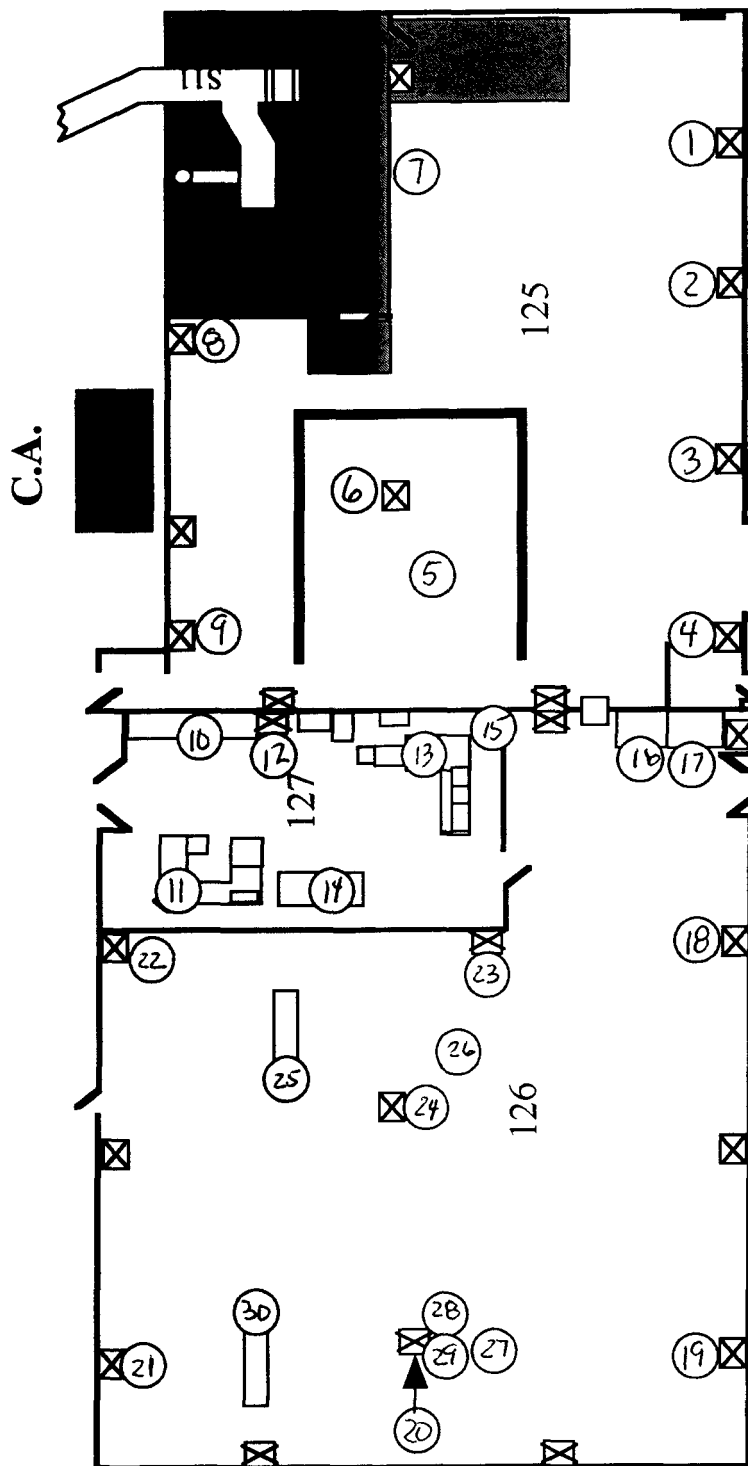
SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Exhaust	3	-44	114	16	B-Box	9	16	24
2	Exhaust	0	-8	24	17	B-Box	3	-32	114
3	Exhaust	3	-16	156	18	Exhaust	3	20	96
4	Exhaust	0	-32	6	19	Exhaust	3	-12	72
5	Elect Box overhead	0	-16	18	20	Exhaust	9	16	960
6	Exhaust overhead	18	40	354	21	Exhaust	6	-20	150
7	Elect Box overhead	6	-20	18	22	Exhaust	9	4	60
8	Exhaust	3	28	96	23	Exhaust	6	36	120
9	Exhaust	0	40	258	24	Exhaust	6	0	66
10	Work bench	3	36	24	25	Storage	0	-36	72
11	Equipment	0	0	36	26	Elect Box overhead	3	40	24
12	Exhaust	12	8	378	27	Elect Box overhead	9	-12	18
13	Equipment	6	-16	30	28	Duct overhead	15	4	42
14	Equipment	3	-12	6	29	Duct overhead	0	36	30
15	Exhaust	3	48	210	30	Storage	6	8	54

Date Reviewed. 3-21-00 RS Supervision: [REDACTED]

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

MODULE F

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.6 cpm</u>	Bkg <u>04 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.63%</u>
MDA <u>16.3 DPM</u>	MDA <u>14.8 DPM</u>	MDA <u>94 DPM</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>N/A</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u></u>
Bkg <u>56 cpm</u>	Bkg <u>50 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>1141 DPM</u>	MDA <u>108.4 DPM</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location F-MOD Survey Area R
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 3-16-00 Time 1500

RCT _____
 Print name / Signature / Emp #

Comments Ceiling / Walls > 2 meters Biased survey points1 minute pats and swipes See map for locations3 alpha bkgd Counts alpha electra < 8cpm (1,1,1)**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1.	W > 2	6	52	36	16	W > 2	3	40	30
2	W > 2	3	76	12	17	C	6	64	12
3.	W > 2	0	-8	42	18	C	6	60	24
4	W > 2	0	4	30	19	C	0	-12	12
5	W > 2	3	32	12	20	C	0	-4	30
6	W > 2	0	28	36	21	C	0	16	24
7.	W > 2	0	-24	24	22	C	3	4	36
8	W > 2	0	-28	36	23	C	0	48	24
9	W > 2	3	4	30	24	C	0	16	12
10	W > 2	6	24	30	25	C	3	12	36
11	W > 2	3	12	18	26	C	3	8	30
12	W > 2	3	-40	6	27	C	0	40	36
13	W > 2	0	-32	12	28	C	3	16	36
14	W > 2	0	20	18	29	C	0	44	30
15	W > 2	3	20	12	30	C	0	20	24

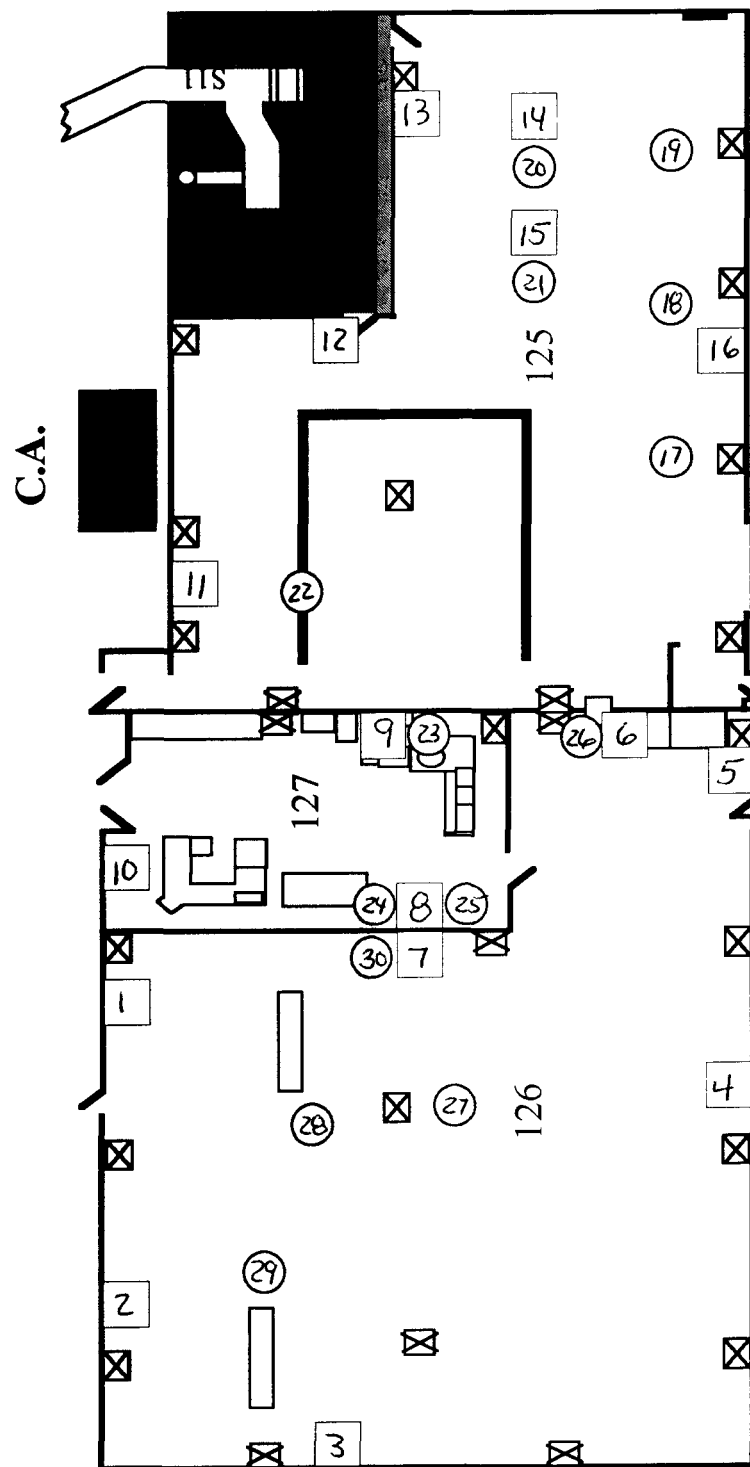
Date Reviewed: 3 21 00 RS Supervision: _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE F



[illegible]

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707
Survey Area: S	Survey Unit: N/A
Survey Unit Description: INSIDE OF MODULE G INCLUDING ROOMS 107, 187, 186, 130, 130A, 130B, 131, 132, 132A, 133, AND 133A EXCLUDES ROOM 131A DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation: <div style="background-color: black; width: 100%; height: 250px; margin-top: 10px;"></div>	

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area S		Survey Unit N/A		Area (m ²) 634	
Survey Unit Description INSIDE OF MODULE G INCLUDING ROOMS 107, 187, 186, 130, 130A, 130B, 131, 132, 132A, 133, AND 133A EXCLUDES ROOM 131A DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS					
Survey Type			Classification		
RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
92	45	40	3	0	102
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area S		Survey Unit N/A		Area (m ²) 634	
Survey Unit Description* INSIDE OF MODULE G INCLUDING ROOMS 107, 187, 186, 130, 130A, 130B, 131, 132, 132A, 133, AND 133A EXCLUDES ROOM 131A DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS					
Survey Type			Classification		
RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
185	188	40	3	0	192
Building		Type.		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type.		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID 99-0002		Building 707
Survey Area. S		Survey Unit N/A
Survey Unit Description • INSIDE OF MODULE G INCLUDING ROOMS 107, 187, 186, 130, 130A, 130B, 131, 132, 132A, 133, AND 133A EXCLUDES ROOM 131A DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>92 unbiased survey points uniformly distributed throughout the rooms in the module as follows</p> <ul style="list-style-type: none"> - Rooms 107, 187 (1 pt on 2 different walls, 2 pts per floor per room) - Rooms 132, 132A, 133, 133A, 130B, 131, 186, 130A (1 pt per wall, 4 per floor per room) - Room 130 (3 pts per wall, 8 per floor) <p>10 biased survey points at the following locations</p> <ul style="list-style-type: none"> - points near criticality drain locations - points near fixed equipment/items labeled as internally contaminated - potentially contaminated locations as determined by RCT based on past history/use/judgement <p>CEILINGS/WALLS > 2 meters</p> <p>35 biased surveys as follows</p> <ul style="list-style-type: none"> - Walls behind process lines/fixed process equipment - Ceilings above GB's/B-Boxes/Hoods - Ceilings/walls adjacent to c-cells/tents - Stained or discolored areas - Walls/ceilings near GB's mounted high on walls - Areas around pipe or other penetrations 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707
Survey Area: S		Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE G INCLUDING ROOMS 107, 187, 186, 130, 130A, 130B, 131, 132, 132A, 133, AND 133A EXCLUDES ROOM 131A DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>185 <u>unbiased</u> survey points uniformly distributed throughout the rooms in the module as follows</p> <ul style="list-style-type: none">- Rooms 107, 187, 186, 131 (2 per wall, 3 per floor)- Rooms 130, 130A, 130B (3 per wall, 7 per floor)- Rooms 132, 132A, 133, 133A (3 per wall, 5 per floor) <p>7 <u>biased</u> survey points at the following locations</p> <ul style="list-style-type: none">- 2 points near criticality drain locations- 5 points near fixed equipment/items labeled as internally contaminated <p>CEILINGS/WALLS > 2 meters</p> <p>101 <u>biased</u> surveys as follows</p> <ul style="list-style-type: none">- Rooms 107, 187, 186, 131 (1 per wall, 1 per ceiling)- Rooms 130, 130A, 130B (2 per wall, 2 per ceiling)- Rooms 132, 132A, 133, 133A (2 per wall, 2 per ceiling)- Walls behind process lines/fixed process equipment- Ceilings above GB's/B-Boxes/Hoods- Ceilings/walls adjacent to c-cells/tents- Stained or discolored areas- Walls/ceilings near GB's mounted high on walls- Areas around pipe or other penetrations	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID. 99-0002		Building 707
Survey Area: S		Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE G INCLUDING ROOMS 107, 187, 186, 130, 130A, 130B, 131, 132, 132A, 133, AND 133A EXCLUDES ROOM 131A DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements (continued)	EQUIPMENT 40 biased survey points on equipment with one or more samples from <ul style="list-style-type: none"> - Gloveboxes/Hoods/B-Boxes which have visible leaks or contained spills beneath them - 2 surveys points at each of 5 room exhaust ducts - 5 survey points on top of overhead piping (where locations are accessible through reach tools) 	
Surface Scanning	FLOORS/WALLS < 2 meters 102 1 m ² surface scans shall be taken at each location identified for surface activity measurements Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 3 biased (paint) media samples taken as follows <ul style="list-style-type: none"> - 1 sample near one of the entrances to the module - 1 sample near contaminated equipment - 1 sample near a criticality drain 	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707
Survey Area: S		Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE G INCLUDING ROOMS 107, 187, 186, 130, 130A, 130B, 131, 132, 132A, 133, AND 133A EXCLUDES ROOM 131A DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements (continued)	EQUIPMENT 40 biased survey points on equipment with one or more samples from <ul style="list-style-type: none"> - Gloveboxes/Hoods/B-Boxes which have visible leaks or contained spills beneath them - 2 surveys points at each of 5 room exhaust ducts - 5 survey points on top of overhead piping (where locations are accessible through reach tools) 	
Surface Scanning	FLOORS/WALLS < 2 meters 192 1 m ² surface scans shall be taken at each location identified for surface activity measurements Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 3 biased (paint) media samples taken as follows <ul style="list-style-type: none"> - 1 sample near one of the entrances to the module - 1 sample near contaminated equipment - 1 sample near a criticality drain 	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: S	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE G INCLUDING ROOMS 107, 187, 186, 130, 130A, 130B, 131, 132, 132A, 133, AND 133A EXCLUDES ROOM 131A DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media "</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

Pg superseded 01/18/00 JF Chg #2

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: S	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE G INCLUDING ROOMS 107, 187, 186, 130, 130A, 130B, 131, 132, 132A, 133, AND 133A EXCLUDES ROOM 131A DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

By superseded 01/18/00 JF chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: S	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE G INCLUDING ROOMS 107, 187, 186, 130, 130A, 130B, 131, 132, 132A, 133, AND 133A. EXCLUDES ROOM 131A DUE TO POSTING AS HCA. BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms. "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02. Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering. Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: S	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE G INCLUDING ROOMS 107, 187, 186, 130, 130A, 130B, 131, 132, 132A, 133, AND 133A EXCLUDES ROOM 131A DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS <ol style="list-style-type: none"> Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> Building number Geographical direction (e.g., indicate which direction is North) Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID 99-0002		Building 707	
Survey Area S		Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys		1	db
Total Activity Surveys		1	db
Exposure Rate Surveys		NA	NA
Removable Surveys		1	db
Media Samples		228	KM
Volumetric Samples		NA	NA
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys		1	db
Total Activity Surveys		1	db
Exposure Rate Surveys		NA	NA
Removable Surveys		1	db
Media Samples		228	KM
Volumetric Samples		NA	NA
Comments 			
<div style="background-color: black; height: 150px; width: 100%;"></div>			

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____
Model _____	Model _____	Model _____	Building: _____
Serial # _____	Serial # _____	Serial # _____	Location: _____
Cal Due _____	Cal Due _____	Cal Due _____	Purpose: _____
Bkg. _____	Bkg. _____	Bkg. _____	RWP # _____
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____
Mfg. _____	Mfg. _____	Mfg. _____	Print name _____ Signature _____ Emp # _____
Model _____	Model _____	Model _____	RCT _____ / _____ / _____
Serial # _____	Serial # _____	Serial # _____	Print name _____ Signature _____ Emp # _____
Cal Due _____	Cal Due _____	Cal Due _____	
Bkg. _____	Bkg. _____	Bkg. _____	
Efficiency _____	Efficiency _____	Efficiency _____	
MDA _____	MDA _____	MDA _____	

PRL #: _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1				26			
2				27			
3				28			
4				29			
5				30			
6				31			
7				32			
8				33			
9				34			
10				35			
11				36			
12				37			
13				38			
14				39			
15				40			
16				41			
17				42			
18				43			
19				44			
20				45			
21				46			
22				47			
23				48			
24				49			
25				50			

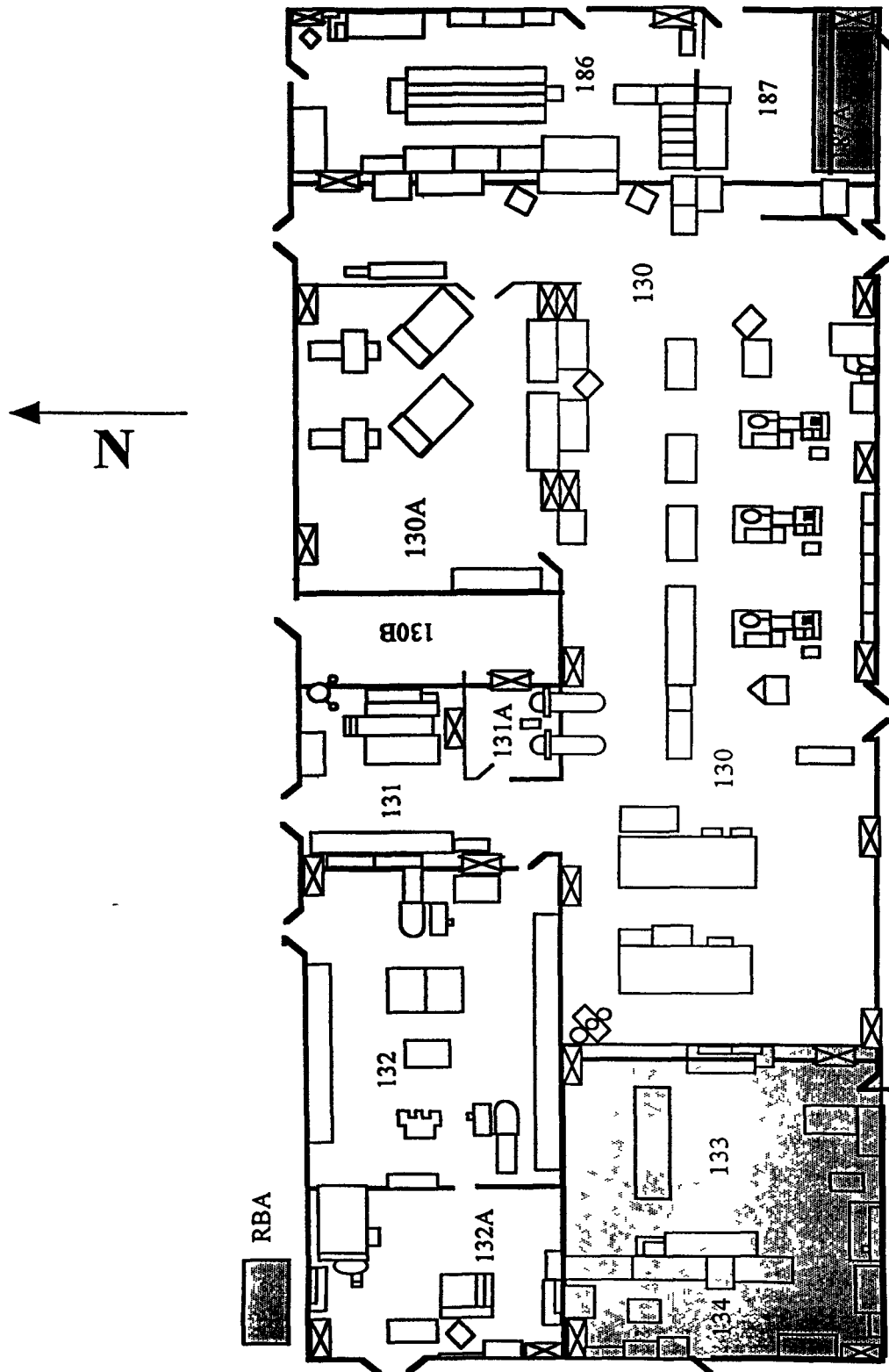
Date Reviewed: _____ RS Supervision: _____ / _____ / _____

Print Name _____ Signature _____ Emp # _____

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE G



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

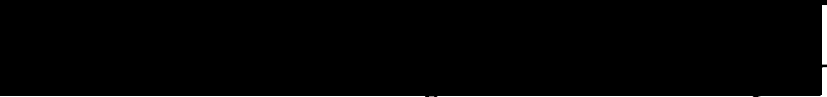
Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # 837	Serial # 1518
Cal Due 4-10-00	Cal Due 5-17-00	Cal Due 6-29-00
Bkg 0.5 cpm	Bkg 0.0 cpm	Bkg 2.0 cpm
Efficiency 33%	Efficiency 33%	Efficiency 21%
MDA 15.6 dpm	MDA 8.2 dpm	MDA 94 dpm
Mfg Eberline	Mfg Eberline	Mfg NeTech
Model BC-4	Model BC-4	Model Electra
Serial # 833	Serial # 872	Serial # 2307
Cal Due 7-14-00	Cal Due 4-12-00	Cal Due 7-12-00
Bkg 6.2 cpm	Bkg 6.4 cpm	Bkg 2.0 cpm
Efficiency 25%	Efficiency 25%	Efficiency 19%
MDA 119.5 dpm	MDA 121.3	MDA 94 dpm

Survey Type Contamination

Building 707
 Location 6 module Survey Area S
 Purpose Reconnaissance Level Characterization

RWP # CC-707-1204Date 3-22-00 Time DaysComments Floor / Walls < 2 meters; Biased survey points1 m² scans, 1 minute pats and swipes See map for locations 1 of 4bkg counts alpha electra < 8cpm**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F	0	8	6	16	F	0	36	46
2	F	0	28	-6	17	F	3	4	6
3	F	3	12	24	18	F	0	-24	48
4	F	0	-24	0	19	F	0	76	355
5	F	6	-32	18	20	F	0	12	24
6	F	0	20	-6	21	F	0	28	-12
7	F	0	-12	30	22	F	3	60	14
8	F	3	8	30	23	F	3	10	24
9	F	0	-48	36	24	F	0	56	74
10	F	0	12	54	25	F	3	12	3942
11	F	3	-40	252	26	F	0	16	30
12	F	3	0	24	27	F	3	-12	6
13	F	0	76	6	28	F	6	36	30
14	F	0	8	6	29	F	0	76	6
15	F	3	28	18	30	F	3	-12	36

Date Reviewed: 4-3-00 RS Supervision: 

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

2 of 4

Drawing Showing Survey Points

Point #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	F	6	4	24	61	W < 2m	3	16	18
32	F	0	16	0	62	" "	6	28	30
33	F	3	0	12	63	" "	0	76	12
34	F	6	60	54	64	" "	0	4	24
35	F	0	12	42	65	" "	3	44	0
36	F	0	40	30	66	" "	0	-20	6
37	F	0	4	12	67	" "	0	8	18
38	F	0	68	30	68	" "	0	76	18
39	F	0	20	6	69	" "	3	-16	18
40	F	0	-44	12	70	" "	0	44	0
41	F	3	8	24	71	" "	6	48	6
42	F	0	88	30	72	" "	3	16	30
43	F	3	16	-6	73	" "	3	-28	18
44	F	0	-4	6	74	" "	3	8	-6
45	W < 2m	3	-16	0	75	" "	0	8	42
46	" "	3	-52	-6	76	" "	0	54	24
47	" "	0	44	-18	77	" "	0	8	12
48	" "	6	48	12	78	" "	0	48	24
49	" "	0	36	24	79	" "	0	12	66
50	" "	0	60	12	80	" "	0	-20	6
51	" "	3	60	18	81	" "	0	32	18
52	" "	3	0	18	82	" "	0	-12	30
53	" "	3	20	30	83	" "	0	-20	12
54	" "	0	-8	72	84	" "	6	-64	18
55	" "	0	28	42	85	" "	0	8	6
56	" "	0	-12	18	86	" "	3	-4	18
57	" "	12	76	30	87	" "	0	28	30
58	" "	0	16	6	88	" "	9	24	18
59	" "	0	36	24	89	" "	0	4	42
60	" "	3	20	6	90	" "	6	36	-12

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

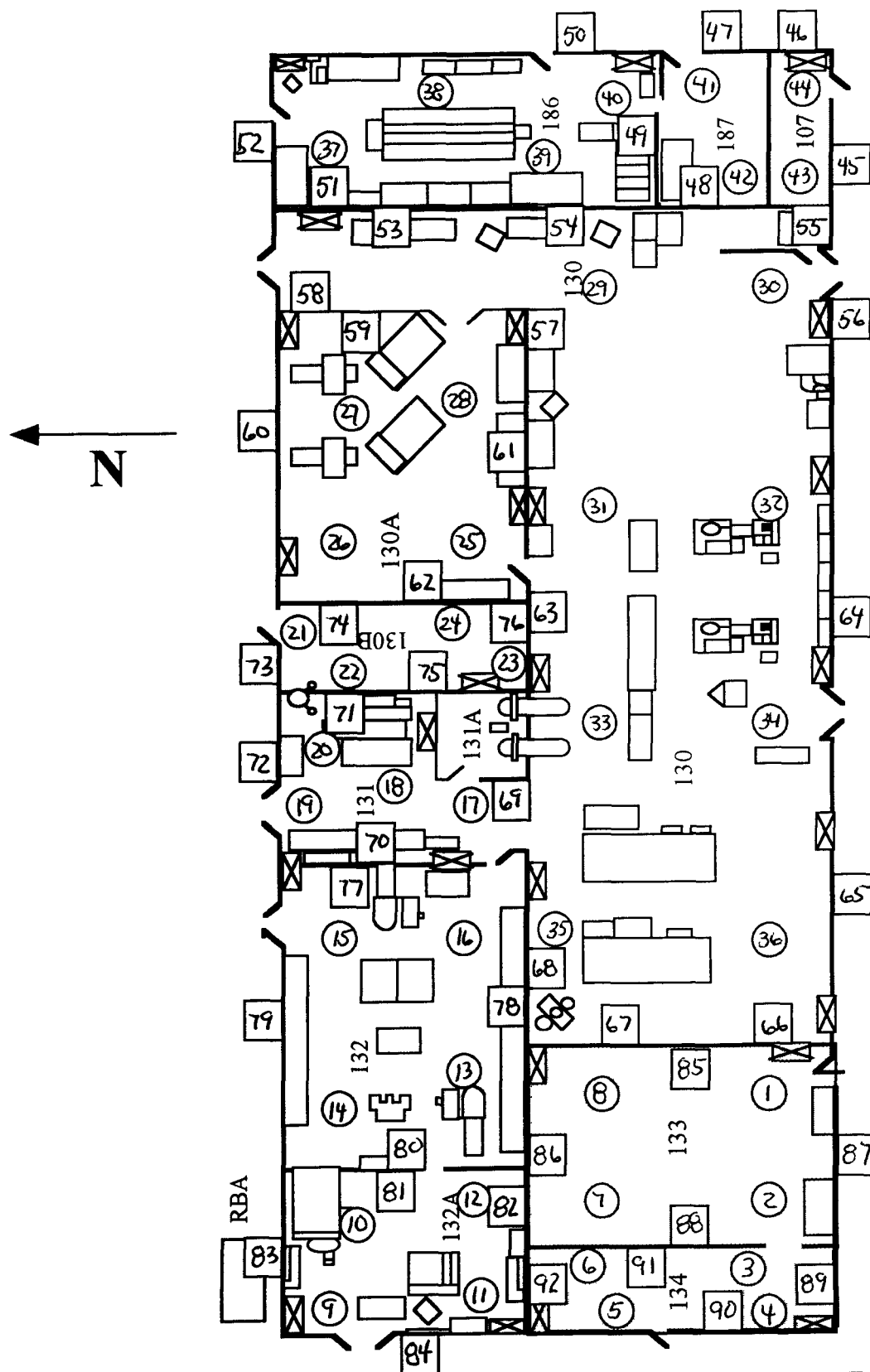
2 of 4

Drawing Showing Survey Points

Point #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
91	W < 2m	6	-48	15	121				
92	W < 2m	0	4	6	122				
93	End of Survey				123				
94					124				
95					125				
96					126				
97					127				
98					128				
99					129				
100					130				
101					131				
102					132				
103					133				
104					134				
105					135				
106					136				
107					137				
108					138				
109					139				
110					140				
111					141				
112					142				
113					143				
114					144				
115					145				
116					146				
117					147				
118					148				
119					149				
120					150				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

MODULE G

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # 837	Serial # 1518
Cal Due 4-10-00	Cal Due 5-17-00	Cal Due 6-29-00
Bkg 0.5 cpm	Bkg 0.0 cpm	Bkg 2.0 cpm
Efficiency 33%	Efficiency 33%	Efficiency 12186
MDA 15.6 dpm	MDA 8.2 dpm	MDA 94 dpm
Mfg Eberline	Mfg Eberline	Mfg NE Tech
Model BC-4	Model BC-4	Model Electra
Serial # 872	Serial # 833	Serial # 1389
Cal Due 4-12-00	Cal Due 7-14-00	Cal Due 6-29-00
Bkg 54 cpm	Bkg 23 cpm	Bkg 1.0 cpm
Efficiency 25%	Efficiency 25%	Efficiency 12096
MDA 112.3 dpm	MDA 111.3 cpm	MDA 94 dpm

Survey Type **Contamination**
 Building **707**
 Location **6 Module** Survey Area **S**
 Purpose **Reconnaissance Level Characterization**

RWP # **00 707 1204**Date **3 23 27** 00 Time **Days**Comments **Floor / Walls < 2 meters** **Biased survey points****1 m² scans, 1 minute pats and swipes** **See map for locations****bkgd Counts alpha electra < 8cpm****SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Rm 132A Center of Rm	6	4	5448	16				
2	Rm 132A Near South wall	0	-20	6720	17	NA			
3	Rm 132 yellow Arrow	3	-16	72	18				
4	Rm 131 Front of Door	3	36	24	19				
5	Rm 130 Old Paint	6	-48	1320	20				
6	Rm 130 Old Paint	0	-20	1980	21				
7	Rm 130 Front of Door	6	32	154	22				
8	Rm 130 Front of Door	0	44	534	23				
9	Rm 130A	0	-52	12	24				
10	Rm 130	6	-48	12	25				
11	End of Survey				26				
12	NA				27				
13					28				
14					29				
15					30				

Date Reviewed **4.3.00** RS Supervision

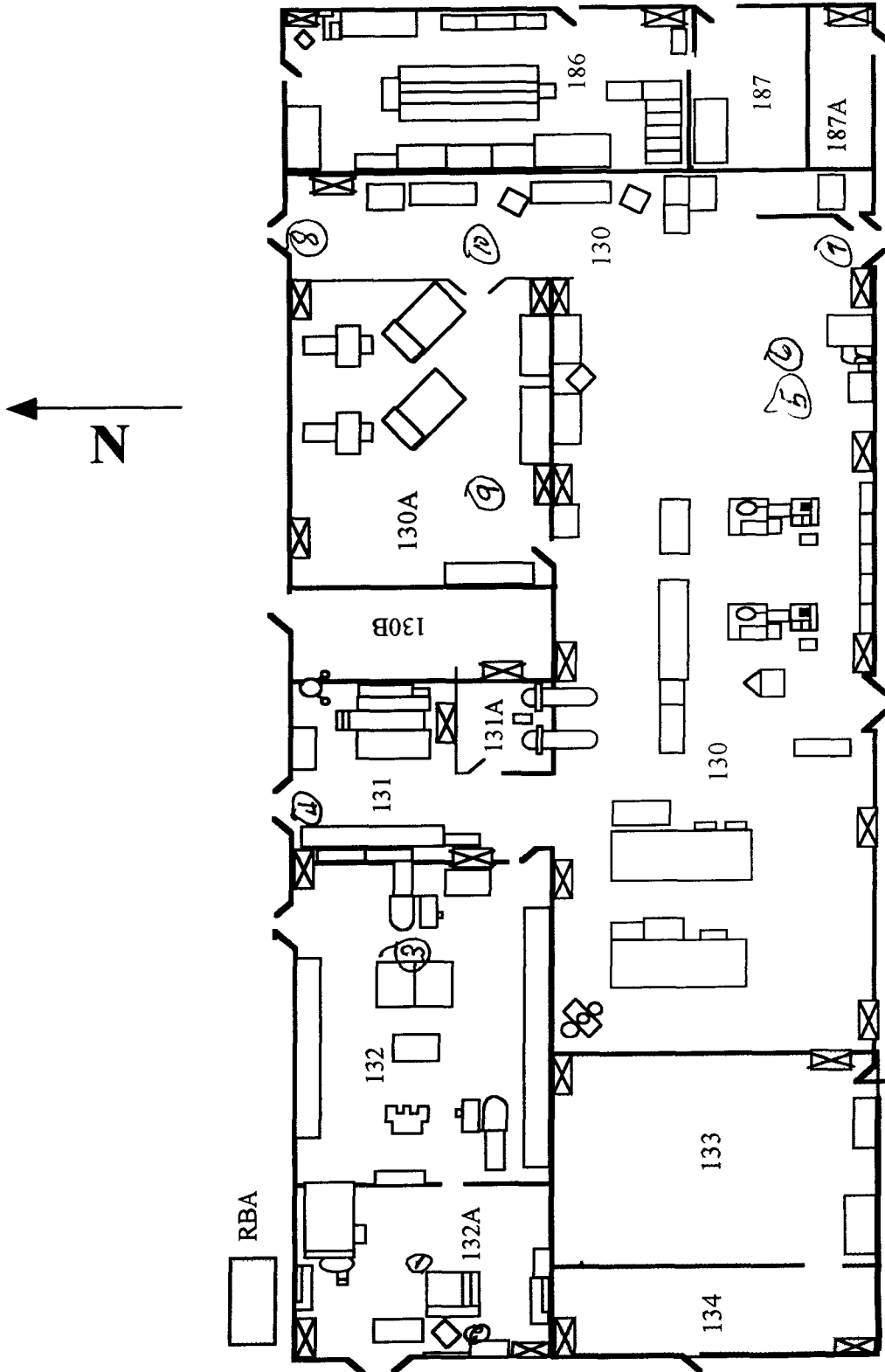
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

2.08.2

Drawing Showing Survey Points

MODULE G



435

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.5 cpm</u>	Bkg <u>0.3 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>1063</u>
MDA <u>15.6 dpm</u>	MDA <u>13.9 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>1233</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>59 cpm</u>	Bkg <u>55 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>1063</u>
MDA <u>116.9 dpm</u>	MDA <u>113.2 dpm</u>	MDA <u>94 dpm</u>

Survey Type Contamination

Building 707
 Location Module G Survey Area S
 Purpose Reconnaissance Level Characterization

RWP # 00 707 1204Date 3-22-00 Time Days

Print name / Signature / Emp #

Comments Ceiling / Walls > 2 meters Biased survey points1 minute pats and swipes See map for locations 1 of 3Back counts alpha electra < 8 cpm**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	<u>W > 2m</u>	0	44	6	16	<u>W > 2m</u>	0	32	6
2	<u>" "</u>	0	-12	24	17	<u>" "</u>	0	4	12
3	<u>" "</u>	0	0	6	18	<u>" "</u>	0	16	12
4	<u>" "</u>	0	12	0	19	<u>" "</u>	0	-8	12
5	<u>" "</u>	0	28	6	20	<u>" "</u>	3	44	12
6	<u>" "</u>	0	24	0	21	<u>" "</u>	0	4	0
7	<u>" "</u>	0	20	0	22	<u>" "</u>	0	-36	12
8	<u>" "</u>	0	-8	6	23	<u>" "</u>	0	24	-6
9	<u>" "</u>	0	48	0	24	<u>" "</u>	0	-16	6
10	<u>" "</u>	3	8	-6	25	<u>" "</u>	3	-16	6
11	<u>" "</u>	6	32	6	26	<u>Ceiling</u>	0	-20	6
12	<u>" "</u>	0	24	6	27	<u>" "</u>	6	-40	12
13	<u>" "</u>	3	44	12	28	<u>" "</u>	0	28	12
14	<u>" "</u>	0	56	-6	29	<u>" "</u>	0	20	12
15	<u>" "</u>	0	24	6	30	<u>" "</u>	0	24	12

Date Reviewed: 4-3-00 RS Supervision: 

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY****Drawing Showing Survey Points**

2 of 3

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	Ceiling	0	8	6	61				
32	"	3	4	24	62				
33	"	0	16	48	63				
34	"	3	32	6	64				
35	"	3	12	12	65				
36	End of Survey				66				
37					67				
38					68				
39					69				
40					70				
41					71				
42					72				
43					73				
44					74				
45					75				
46					76				
47					77				
48					78				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

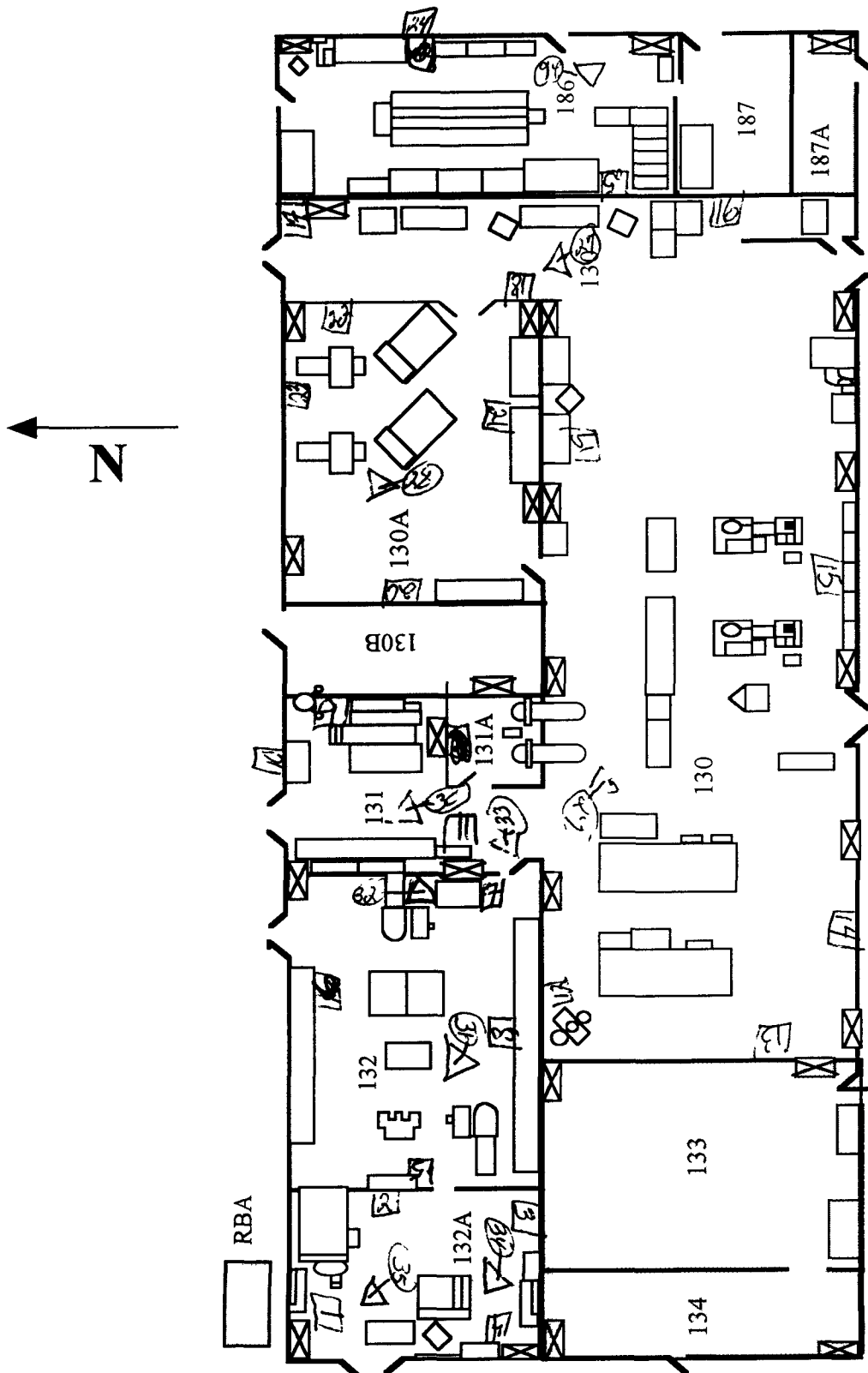
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

3 of 3

MODULE G



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # 837	Serial # 1518
Cal Due 4-10-00	Cal Due 5-17-00	Cal Due 6-29-00
Bkg 0.5 cpm	Bkg 0.0 cpm	Bkg 2.0 cpm
Efficiency 33%	Efficiency 33%	Efficiency 218%
MDA 15.6 dpm	MDA 8.6 dpm	MDA 94 dpm

Mfg Eberline	Mfg Eberline	Mfg NE Tech
Model BC-4	Model BC-4	Model Electra
Serial # 872	Serial # 833	Serial # 1389
Cal Due 4-12-00	Cal Due 7-14-00	Cal Due 6-29-00
Bkg 54 cpm	Bkg 53 cpm	Bkg 10 cpm
Efficiency 25%	Efficiency 25%	Efficiency 209%
MDA 112.3 dpm	MDA 111.3 dpm	MDA 94 dpm

Survey Type Contamination

Building 707
 Location G Module Survey Area S
 Purpose Reconnaissance Level Characterization

RWP # 00 707 1204

Date 3-23-00 3-27-00 Time Days

Comments Equipment Biased survey points

1 minute pats and swipes See map for locations

bkgd Counts alpha electra - 8cpm

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Rm 132A Air Vent # 18	0	36	90	16	Rm 130 Tank	0	44	12
2	Rm 132A Air Vent # 17	3	32	312	17	Rm 130 Air Vent # 10	3	36	816
3	Rm 132A 1/2" Copper pipe, Valve	3	4	30	18	Rm 130 Air Vent # 8	12	-20	150
4	Rm 132A Power Control Box	0	36	16	19	Rm 130A Boston Green Retrorefl	4	64	1500
5	Rm 132 Pipe, Valve, Box	2	40	30	20	Rm 130A Air Vent # 7	3	8	60
6	Rm 132 Air Vent # 16	0	0	138	21	Rm 130A Air Vent # 5	9	0	180
7	Rm 132 Mover Cart	6	48	180	22	Rm 130 Air Vent # 3	9	-20	210
8	Rm 132 Air Vent # 15	3	4	120	23	Rm 130 Air Vent	90	4	248
9	Rm 132 Box	3	52	24	24	Rm 130 Down Draft Table	0	-36	36
10	Rm 132 Electrical Pipe Box	0	-20	6	25	Rm 130 Air Vent # 36	6	72	180
11	Rm 131 Trich. Tank	156	12	12714	26	Rm 130 Air Vent # 33	3	44	120
12	Rm 131 Work Bench	0	-44	654	27	Rm 130 Manual Table # 28	4	0	22320
13	Rm 131 Platform	12	-12	300	28	Rm 130 Manual Table # 27	0	-32	120
14	Rm 131 Top of Trich. Tank	3	32	48	29	Rm 130 Electrical Connection	0	44	108
15	Rm 130 Air Vent # 17	27	-16	90	30	Rm 130 Air Vent # 25	3	-4	66

Date Reviewed 4 3 00 RS Supervisor

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

2 of 3

Drawing Showing Survey Points

Point #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	Rm 130 Air Vent # 23	3	0	90	61				
32	Rm 130 Manual table # 32	3	-8	1962	62				
33	Rm 186 Air Vent # 2	0	-28	198	63				
34	Rm 186 Air Vent	6	0	48	64				
35	Rm 187 File Cabinet	0	-28	42	65				
36	Rm 187A Air Vent # 1	0	0	96	66				
37	Rm 133 Air Vent # 34	12	16	12	67				
38	Rm 133 Air Vent # 35	0	-20	18	68				
39	Rm 134 Air Vent # 37	0	32	12	69				
40	Rm 134 Air Vent # 36	6	-4	30	70				
41	End of Survey				71				
42					72				
43					73				
44					74				
45					75				
46					76				
47					77				
48					78				
49					79				
50					80				
51					81				
52					82				
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54					84				
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56					86				
57					87				
58					88				
59					89				
60					90				

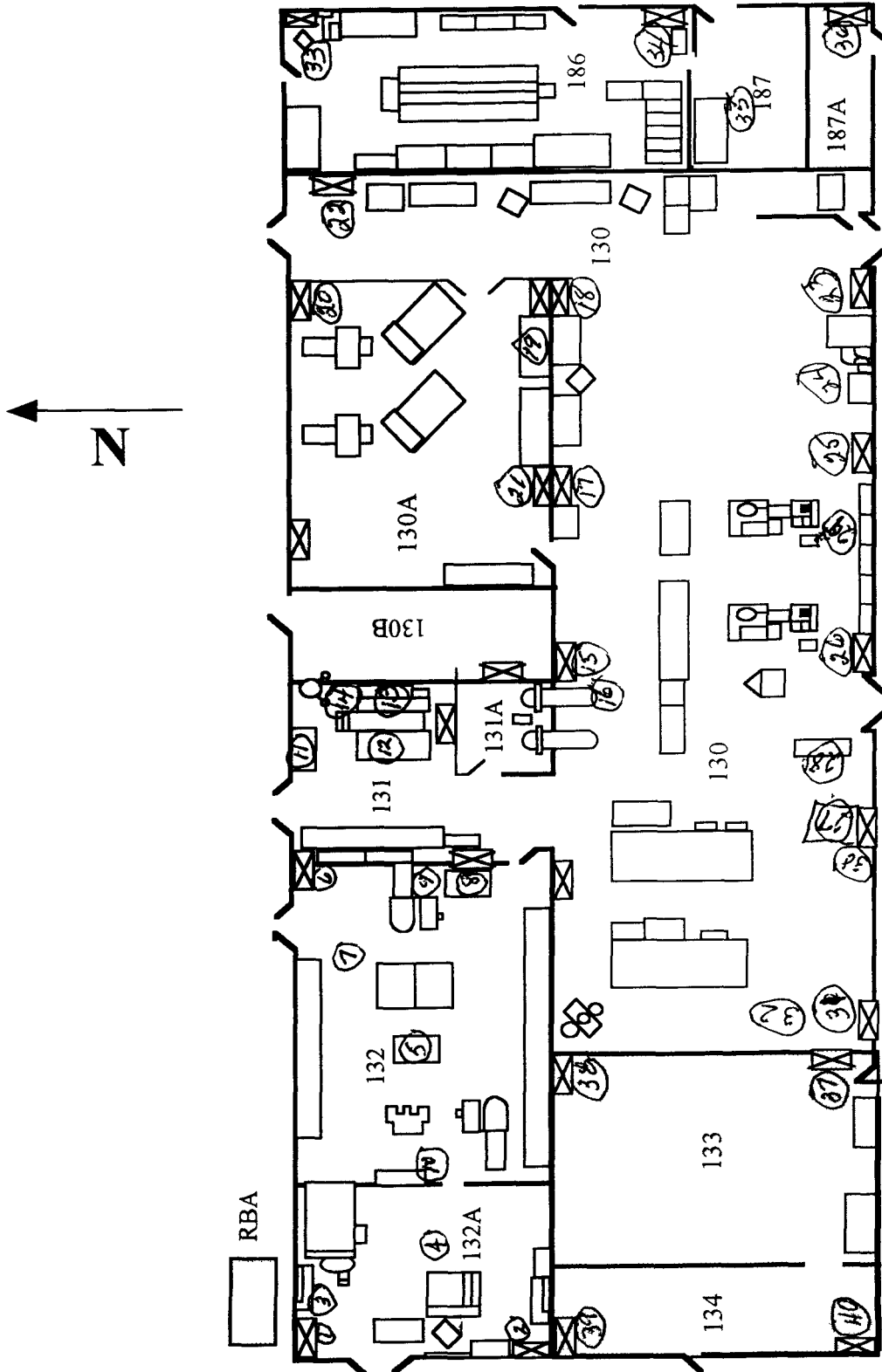
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

3 of 3

MODULE G



SURVEY PACKAGE TRACKING FORM

[illegible]

Page superseded 8/22/00 Chg # 4

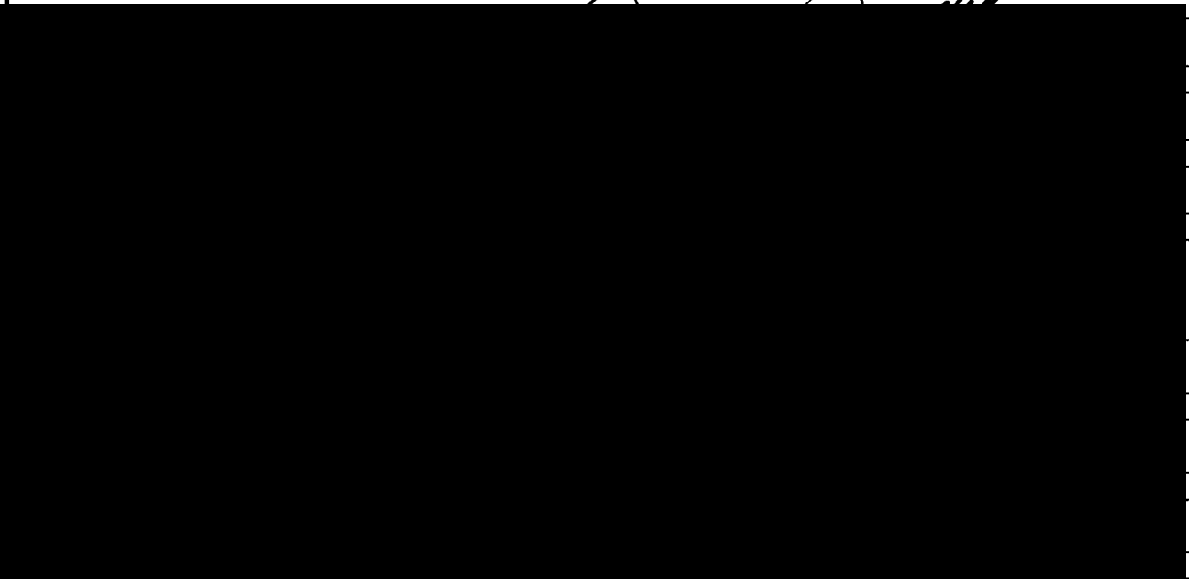
INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area T		Survey Unit N/A		Area (m ²) 634	
Survey Unit Description. INSIDE OF MODULE H INCLUDING ROOMS 189, 190, 191, 135, VAULTS 135A THROUGH 135F, AND 136 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS					
Survey Type			Classification		
RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
140	85	40	3	0	157
Building		Type.		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area T		Survey Unit N/A		Area (m ²) 634	
Survey Unit Description INSIDE OF MODULE H INCLUDING ROOMS 189, 190, 191, 135, VAULTS 135A THROUGH 135F, AND 136 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS					
Survey Type			Classification		
RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
72	35	30	3	0	82
Building		Type		Survey Area	
Survey Unit.			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit.			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707
Survey Area: T	Survey Unit: N/A
Survey Unit Description: INSIDE OF MODULE H INCLUDING ROOMS 189, 190, 191, 135, VAULTS 135A THROUGH 135F, AND 136 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation:	
	

Pg superseded 3/22/00 Chg #4

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID. 99-0002		Building 707
Survey Area: T		Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE H INCLUDING ROOMS 189, 190, 191, 135, VAULTS 135A THROUGH 135F, AND 136 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>140 <u>unbiased</u> survey points uniformly distributed as follows</p> <ul style="list-style-type: none"> - Rooms 189, 190, 191, Vaults 135A through 135F (2 per wall/ 3 per floor) - Room 136 (3 per wall/ 5 per floor) - Room 135 (3 per wall/ 9 per floor) <p>17 <u>biased</u> survey points at the following locations</p> <ul style="list-style-type: none"> - 2 points near criticality drain locations - 5 points near fixed equipment/items labeled as internally contaminated - Other areas as determined by RB/RCT <p>CEILINGS/WALLS > 2 meters</p> <p>68 <u>biased</u> surveys as follows</p> <ul style="list-style-type: none"> - Rooms 189, 190, 191, Vaults 135A through 135F (1 per wall/ 1 per ceiling) - Room 136 (2 per wall/ 2 per ceiling) - Room 135 (2 per wall/ 3 per ceiling) - Walls behind process lines/fixed process equipment - Ceilings above GB's/B-Boxes/Hoods - Ceilings/walls adjacent to c-cells/tents - Stained or discolored areas - Walls/ceilings near GB's mounted high on walls - Areas around pipe or other penetrations <p>EQUIPMENT</p> <p>40 <u>biased</u> survey points on equipment with one or more samples from</p> <ul style="list-style-type: none"> - Gloveboxes/Hoods/B-Boxes or areas which have visible leaks or contained spills beneath them - 2 surveys points at each of 5 room exhaust ducts - 5 survey points on top of overhead piping (where locations are accessible) 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID 99-0002		Building 707
Survey Area: T		Survey Unit N/A
Survey Unit Description. INSIDE OF MODULE H INCLUDING ROOMS 189, 190, 191, 135, VAULTS 135A THROUGH 135F, AND 136 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>72 <u>unbiased</u> survey points uniformly distributed throughout the survey area</p> <p>10 <u>biased</u> survey points at the following locations</p> <ul style="list-style-type: none"> - 2 points near criticality drain locations - 5 points near fixed equipment/items labeled as internally contaminated - Other areas as determined by RE/RCT <p>CEILINGS/WALLS > 2 meters</p> <p>25 <u>biased</u> surveys as follows</p> <ul style="list-style-type: none"> - Walls behind process lines/fixed process equipment - Ceilings above GB's/B-Boxes/Hoods - Ceilings/walls adjacent to c-cells/tents - Stained or discolored areas - Walls/ceilings near GB's mounted high on walls - Areas around pipe or other penetrations - Other areas as determined by RCT/RE <p>EQUIPMENT</p> <p>30 <u>biased</u> survey points on equipment with one or more samples from</p> <ul style="list-style-type: none"> - Gloveboxes/Hoods/B-Boxes or areas which have visible leaks or contained spills beneath them - Surveys points at room exhaust ducts - Survey points on top of overhead piping (where locations are accessible) - Other areas as determined by RCT/RE 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707
Survey Area: T		Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE H INCLUDING ROOMS 189, 190, 191, 135, VAULTS 135A THROUGH 135F, AND 136 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 82 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 3 biased (paint) media samples taken as follows: <ul style="list-style-type: none"> - 1 sample near one of the entrances to the module - 1 sample near contaminated equipment - 1 sample near a criticality drain 	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Pg superseded by 3/22/00 Chg #4

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building: 707
Survey Area: T		Survey Unit: N/A
Survey Unit Description: INSIDE OF MODULE H INCLUDING ROOMS 189, 190, 191, 135, VAULTS 135A THROUGH 135F, AND 136 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 157 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 3 biased (paint) media samples taken as follows: <ul style="list-style-type: none"> - 1 sample near one of the entrances to the module - 1 sample near contaminated equipment - 1 sample near a criticality drain 	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

By superseded 01/18/00

Chg #2

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building: 707
Survey Area: T	Survey Unit: N/A
Survey Unit Description: INSIDE OF MODULE H INCLUDING ROOMS 189, 190, 191, 135, VAULTS 135A THROUGH 135F, AND 136 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For each media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <u>Contamination Monitoring Requirements, prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <u>Contamination Monitoring Requirements</u> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: T	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE H INCLUDING ROOMS 189, 190, 191, 135, VAULTS 135A THROUGH 135F, AND 136 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

By superseded 01/18/00 JG Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: T	Survey Unit N/A
Survey Unit Description. INSIDE OF MODULE H INCLUDING ROOMS 189, 190, 191, 135, VAULTS 135A THROUGH 135F, AND 136 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition</u> to the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: T	Survey Unit N/A
Survey Unit Description. INSIDE OF MODULE H INCLUDING ROOMS 189, 190, 191, 135, VAULTS 135A THROUGH 135F, AND 136 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Building 707	
Survey Area T	Survey Unit N/A	
Survey Type. Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>		
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	1	db
Total Activity Surveys	1	db
Exposure Rate Surveys	NA	NA
Removable Surveys	1	db
Media Samples	[Signature]	KMM
Volumetric Samples	NA	NA
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	1	db
Total Activity Surveys	1	db
Exposure Rate Surveys	NA	NA
Removable Surveys	1	db
Media Samples	[Signature]	KMM
Volumetric Samples	NA	NA
Comments 		
<div style="background-color: black; height: 100px;"></div>		
	Signature	Date

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date _____ Time _____

RCT _____

Print name _____

Signature _____

Emp. # _____

RCT _____

Print name _____

Signature _____

Emp. # _____

PRL #: _____

Comments. _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1 _____	_____	_____	_____	26 _____	_____	_____	_____
2 _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33 _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

Date Reviewed: _____

RS Supervision: _____

Print Name _____

Signature _____

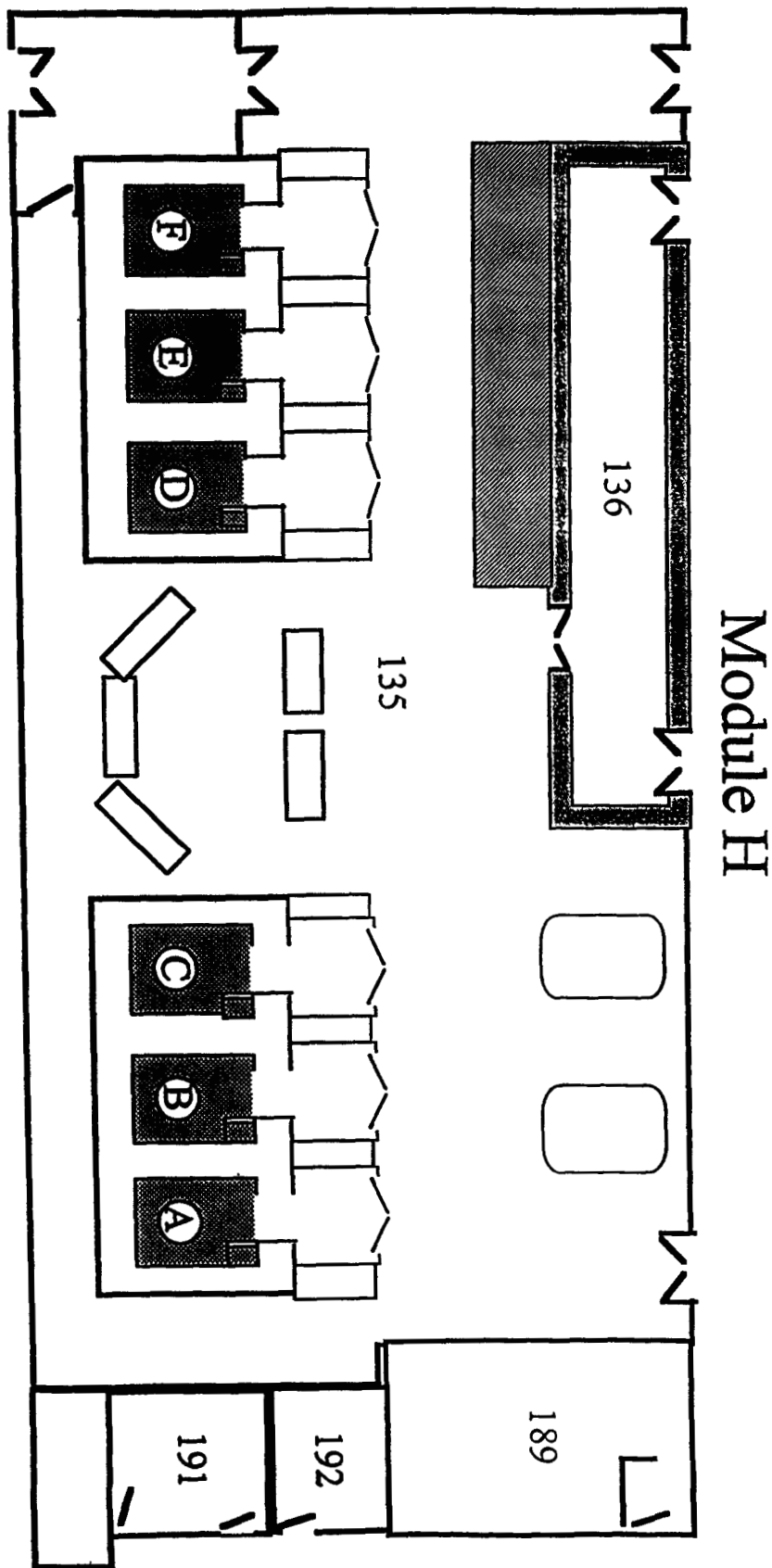
Emp. # _____

456

299/466

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial #	Serial # 1518
Cal Due 4-10-00	Cal Due N/A	Cal Due 6-29-00
Bkg 0.4 cpm	Bkg	Bkg 1 cpm
Efficiency 33%	Efficiency 33%	Efficiency 17%
MDA 148 dpm	MDA	MDA 94 dpm

Survey Type Contamination

Building 707
 Location Medline H Survey Area T
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 3-27-00 Time 1630

Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model BC-4	Model
Serial # 872	Serial # 833	Serial #
Cal Due 4-12-00	Cal Due 7-14-00	Cal Due N/A
Bkg 56 cpm	Bkg 53 cpm	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA 1141 dpm	MDA 1113 dpm	MDA

Comments Floor / Walls < 2 meters Biased survey points1 m² scans, 1 minute pats and swipes See map for locationsAll on Floor**SURVEY RESULTS**

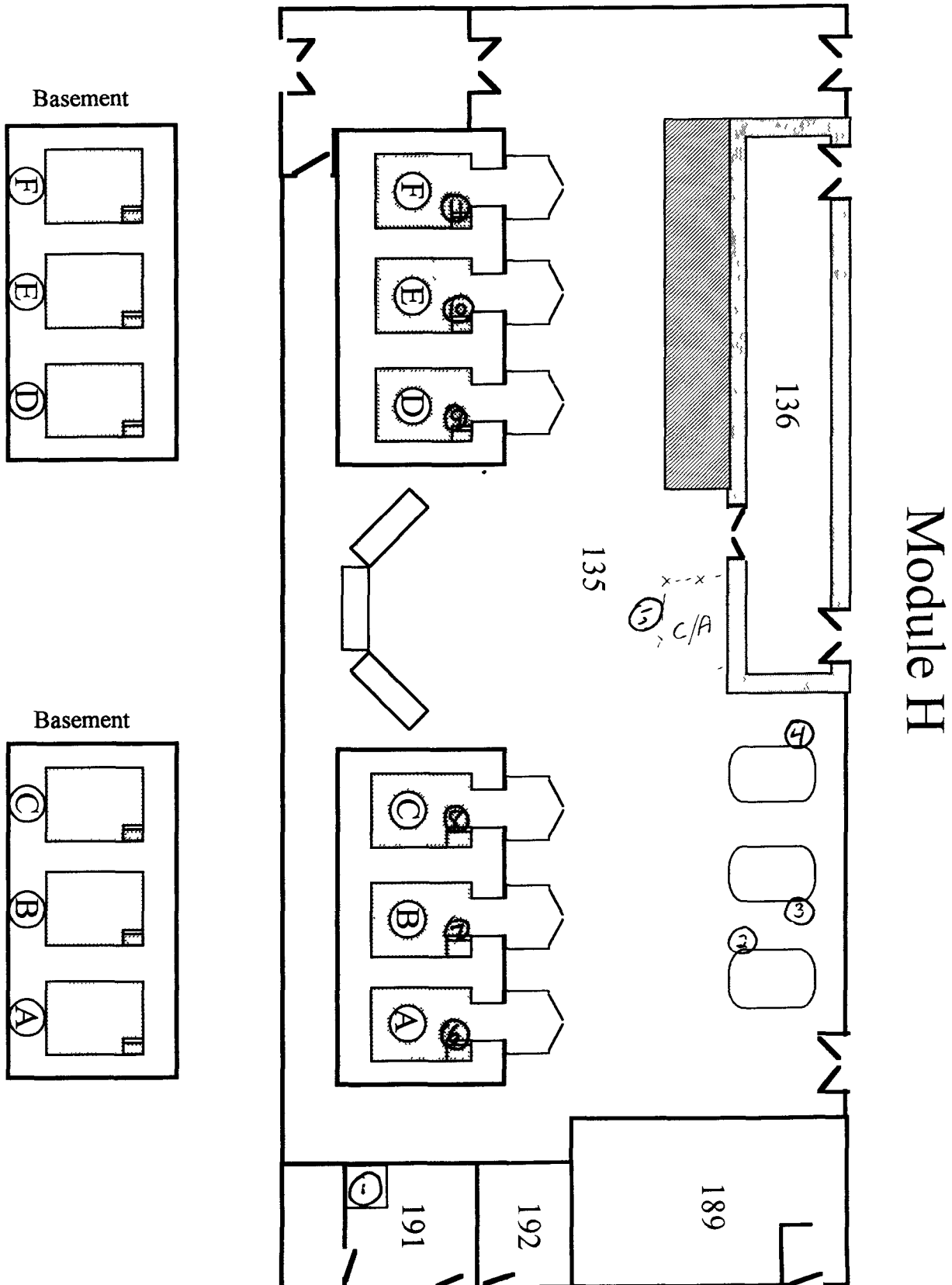
Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	SEE MAP	0	0	114	16				
2	SEE MAP	0	-16	24	17				
3	SEE MAP	0	-8	6	18				
4	SEE MAP	0	72	30	19				
5	SEE MAP	0	-20	24	20				
6	SEE MAP	0	-32	42	21				
7	SEE MAP	0	-44	78	22				
8	SEE MAP	6	0	126	23				
9	SEE MAP	6	28	66	24				
10	SEE MAP	0	12	108	25				
11	SEE MAP	0	32	96	26				
12	End of Survey				27				
13					28				
14					29				
15					30				

Date Reviewed. 4-26-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>812</u>	Serial # <u>849</u>	Serial # <u>1518</u>
Cal Due <u>9-25-00</u>	Cal Due <u>4-10-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.3 cpm</u>	Bkg <u>2 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>129 dpm</u>	MDA <u>139 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>1518</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>N/A</u>
Bkg <u>60 cpm</u>	Bkg <u>53 cpm</u>	Bkg <u>2 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>17%</u>
MDA <u>1178 dpm</u>	MDA <u>1113 dpm</u>	MDA <u>94 dpm</u>

Survey Type Contamination

Building 707
 Location Module 14 Survey Area T
 Purpose Reconnaissance Level Characterization

RWP # 00-707 1204Date 3-29-00 Time 1630

RCT Hersey Hersey
 Print name Signature

RCT CHOEN CHOEN
 Print name Signature

Comments Equipment Biased survey points
1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	PANEL	3	0	102	16	canberra equip	3	8	84
2	Vent	0	-16	48	17	Transformer	0	0	90
3	autoclave	0	-16	48	18	work station	3	0	54
4	autoclave	3	-16	54	19	work station	3	-8	42
5	autoclave	3	-24	66	20	Hydraulic system	6	-16	66
6	autoclave	3	24	90	21	Furnace Panel	0	-24	36
7	Furnace	0	-32	90	22	Furnace Pump	3	32	66
8	Furnace	3	-16	66	23	Hydraulic system	0	-40	60
9	Furnace	0	48	72	24	cabinet	4	28	78
10	autoclave PANEL	0	-20	72	25	Hydraulic system	0	-4	78
11	Air lines	0	0	24	26	Air lines	3	44	144
12	Helium system (old)	0	0	36	27	Air lines (cooling lines)	0	20	12
13	Air lines	0	-48	138	28	SINK	0	-20	18
14	Cooling water	0	28	102	29	BASIN	0	-8	66
15	Furnace Panel	3	-20	108	30	Mirror Housing	3	16	60

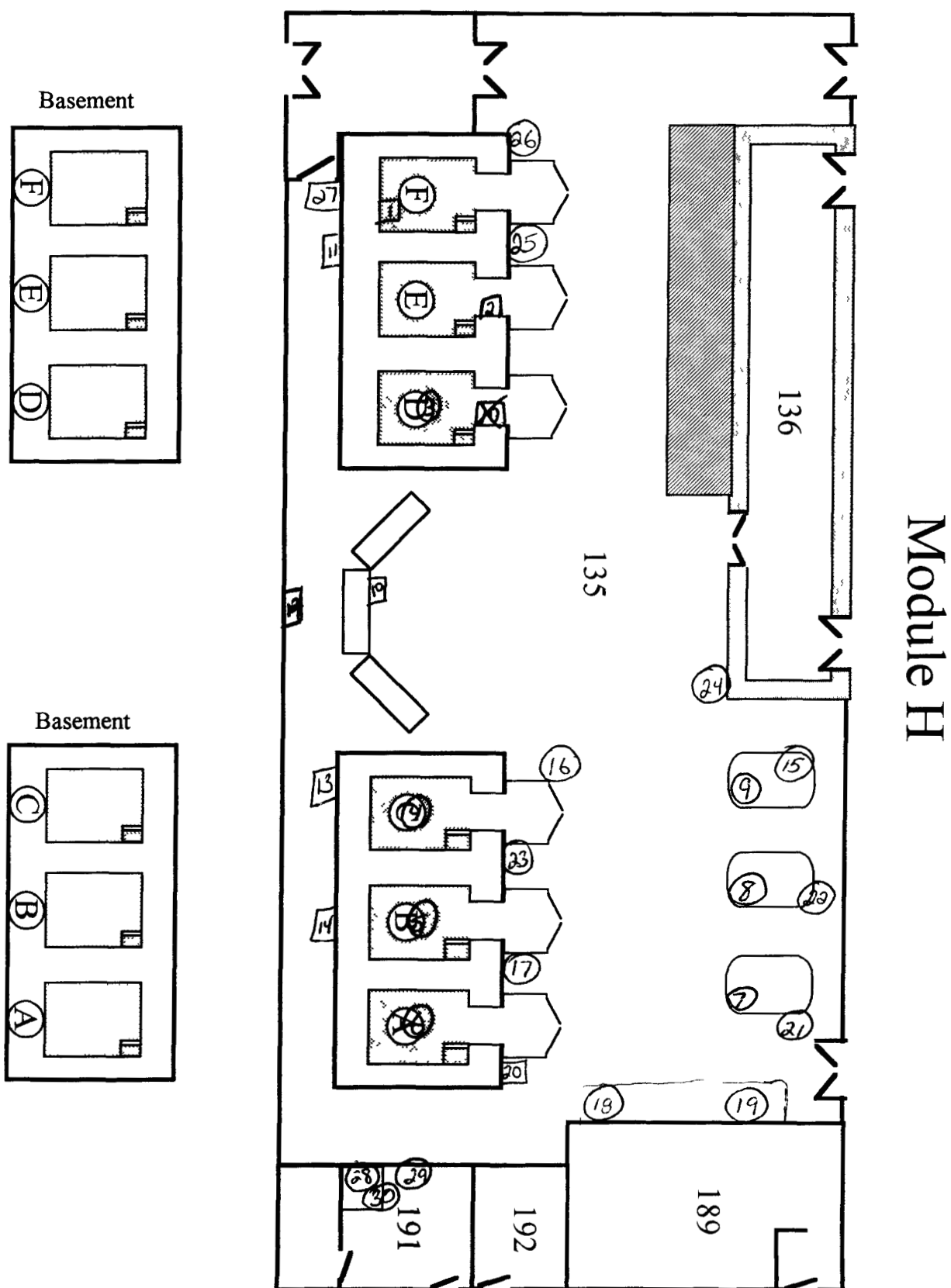
Date Reviewed. 4-26-00 RS Supervision: Shunk

Print Name

Signature

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 812	Serial # 849	Serial # 2520-133
Cal Due 9-25-00	Cal Due 4-10-00	Cal Due 5-11-00
Bkg 0.1 cpm	Bkg 0.6 cpm	Bkg 1.0
Efficiency 33%	Efficiency 33%	Efficiency 17%
MDA 11.5 dpm	MDA 16.3 dpm	MDA 94 dpm
Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model BC-4	Model
Serial # 872	Serial # 833	Serial #
Cal Due 7-12-00	Cal Due 7-14-00	Cal Due N/A
Bkg 5.2 cpm	Bkg 5.4 cpm	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA 110.4 dpm	MDA 112.3 dpm	MDA

Survey Type Contamination

Building 707
 Location Module H Survey Area T
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 3-28-00 Time 1630

R

R

Comments Ceiling / Walls > 2 meters Biased survey points
1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	wall	3	96	48	16	Ceiling	0	-20	36
2	wall	0	-8	84	17	Ceiling	0	32	30
3	wall	6	20	66	18	Ceiling	0	-8	42
4	wall	0	52	90	19	Ceiling	0	60	54
5	wall	0	72	30	20	Ceiling	0	-20	264
6	wall	0	60	18	21	Ceiling	0	60	76
7	wall	0	36	30	22	Ceiling	0	12	42
8	wall	0	100	30	23	Ceiling	6	12	120
9	wall	3	56	18	24	Ceiling	0	8	102
10	wall	0	8	42	25	Ceiling	0	40	108
11	wall	0	36	54	26	END of Survey			
12	wall	9	-44	12	27				
13	ceiling	0	60	18	28				
14	ceiling	0	-24	30	29				
15	ceiling	0	44	18	30				

Date Reviewed 4-26-00 RS Supervision

Print Name

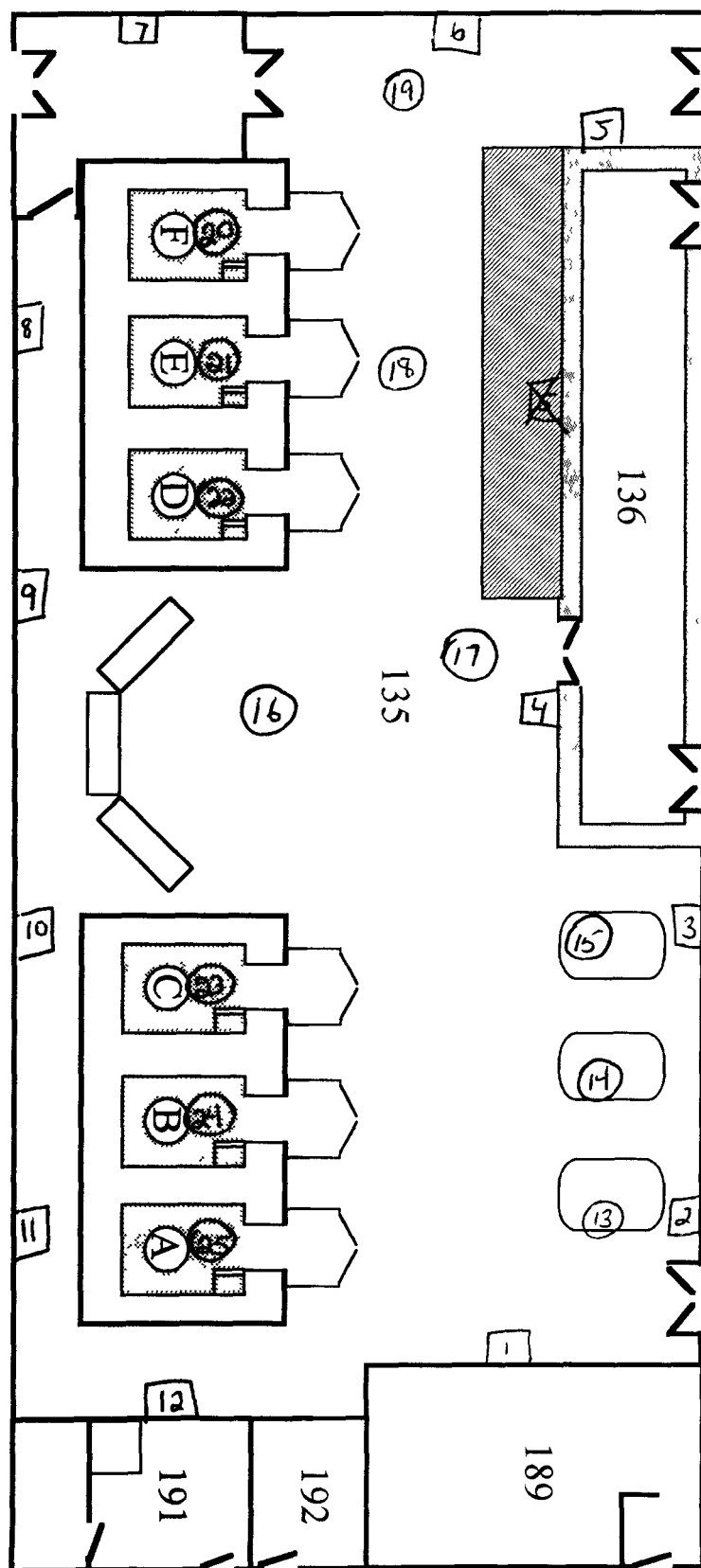
Signature

Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



Module H

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**


Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>N/A</u>	Serial # <u>1518</u>
Cal Due <u>4-10-00</u>	Cal Due <u>N/A</u>	Cal Due <u>6-29-00</u>
Bkg <u>24 dpm</u>	Bkg <u>N/A</u>	Bkg <u>1 dpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>12%</u>
MDA <u>14.8 dpm</u>	MDA <u>N/A</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>N/A</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>N/A</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>N/A</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>N/A</u>
Bkg <u>56 dpm</u>	Bkg <u>53 dpm</u>	Bkg <u>N/A</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>N/A</u>
MDA <u>114.1 dpm</u>	MDA <u>11.3 dpm</u>	MDA <u>N/A</u>

Survey Type Contamination

Building 707
 Location Module H Survey Area T
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 3-27-00 Time 1630Comments Floor / Walls < 2 meters Unbiased survey points1 m² scans, 1 minute pats and swipes See map for locationsLocations 64-72 in Vault - full of drum**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Floor	0	28	42	16	Floor	0	44	90
2	Wall	3	4	72	17	Wall	0	36	6
3	Floor	0	28	54	18	Floor	0	36	24
4	Wall	0	16	18	19	Floor	0	4	42
5	Wall	0	24	54	20	Wall	0	8	18
6	Floor	0	24	60	21	Floor	6	16	54
7	Wall	3	40	66	22	Wall	0	4	42
8	Floor	3	20	60	23	Floor	0	32	24
9	Floor	0	0	24	24	Floor	3	12	30
10	Floor	0	4	24	25	Floor	6	8	24
11	Wall	0	28	24	26	Wall	0	12	42
12	Floor	3	20	30	27	Floor	0	12	42
13	Wall	3	20	24	28	Floor	0	28	66
14	Floor	0	0	42	29	Floor	3	32	60
15	Wall	3	40	48	30	Floor	3	48	36

Date Reviewed 4-26-00 RS Supervision. 

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

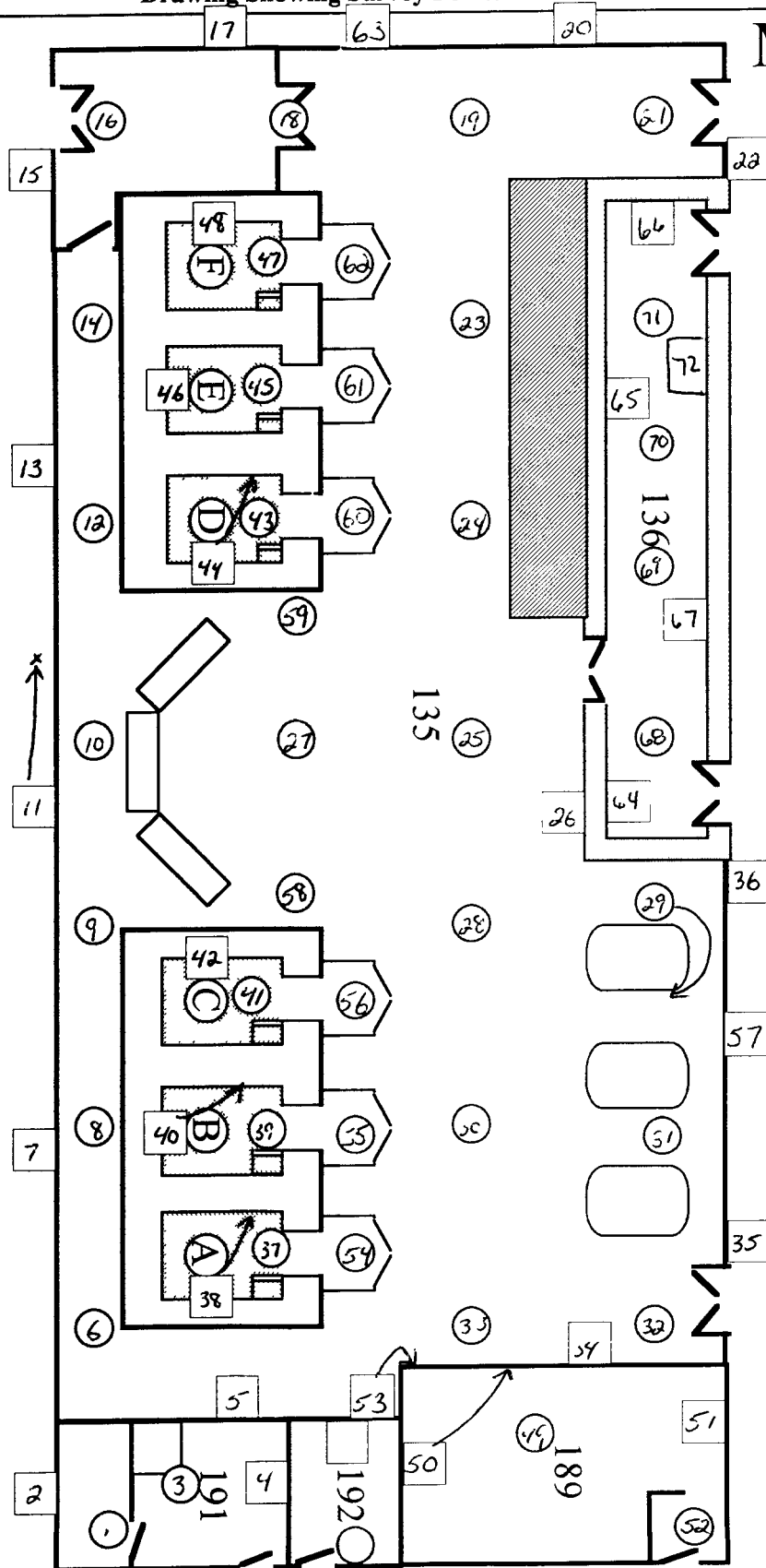
Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	Floor	3	24	66	61	Floor	3	20	96
32	Floor	0	48	60	62	Floor	0	32	108
33	Floor	3	36	30	63	Wall	3	0	66
34	Wall	3	12	48	64	see note			
35	Wall	0	12	24	65				
36	Wall	0	96	60	66				
37	Floor	0	20	180	67				
38	Wall	3	12	180	68				
39	Floor	0	20	218 218	69				
40	Wall	3	8	108	70				
41	Floor	3	12	48	71	see note			
42	Wall	0	48	54	72	see note			
43	Floor	0	28	96	73	END OF SURVEY			N/A
44	Wall	0	40	192	74				
45	Floor	3	24	96	75				
46	Wall	0	80	78	76				
47	Floor	3	52	66	77				
48	Wall	3	4	72	78				
49	Floor	0	8	24	79				
50	Wall	0	44	6	80				
51	Wall	0	20	48	81				
52	Floor	0	44	24	82				
53	Wall	0	60	36	83				
54	Floor	3	28	24	84				
55	Floor	0	20	78	85				
56	Floor	3	16	30	86				
57	Wall	0	8	48	87				
58	Floor	0	32	18	88				
59	Floor	6	36	30	89				
60	Floor	0	52	30	90	N/A			

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Module H



466

SURVEY PACKAGE TRACKING FORM

[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

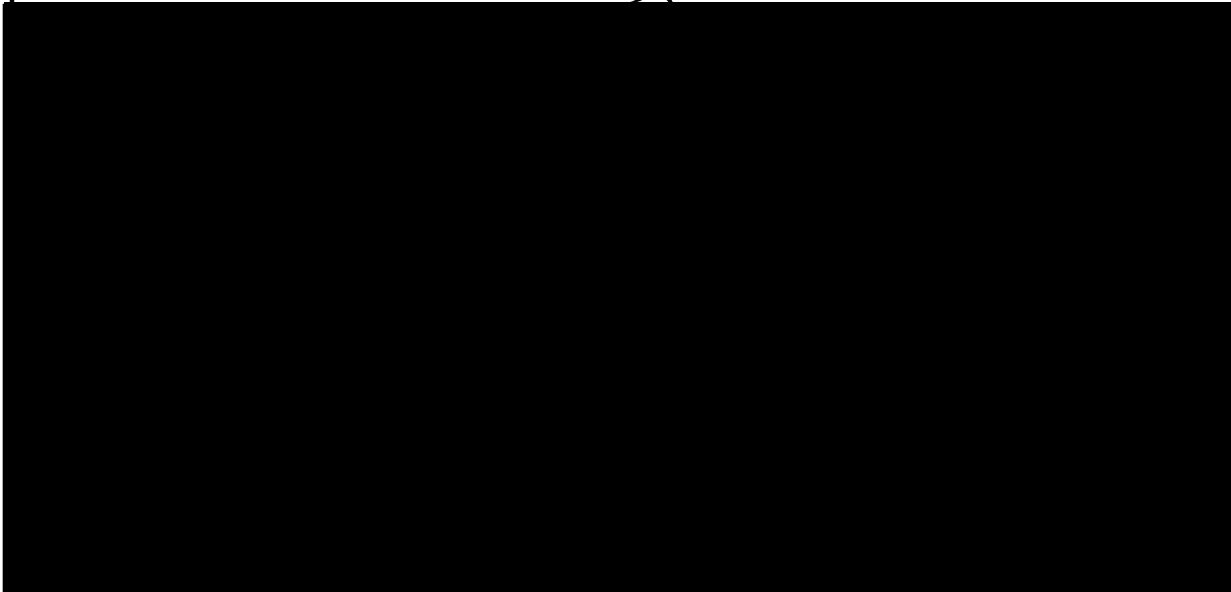
Package ID 99-0002		Building. 707		Type 3	
Survey Area U		Survey Unit N/A		Area (m ²) 891	
Survey Unit Description RBA ROOMS 167, 169, 173, 175, 179, 171, 180, 181, 181B, 181A, 181C, 182A, 182B, 182C, 183, 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, BUT WAS GROUPED WITH THIS SURVEY AREA DUE TO LOCATION					
Survey Type* RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
93	50	30	3	0	103
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type* RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type:		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description*					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

Page superseded 3/14/00 Chg # 4

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area U		Survey Unit N/A		Area (m ²) 891	
Survey Unit Description RBA ROOMS 167, 169, 173, 175, 179, 171, 180, 181, 181B, 181A, 181C, 182A, 182B, 182C, 183, 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, BUT WAS GROUPED WITH THIS SURVEY AREA DUE TO LOCATION					
Survey Type			Classification		
RLC Survey X <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
275	275	60	3	0	300
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building 707
Survey Area: U	Survey Unit: N/A
Survey Unit Description: RBA ROOMS 167, 169, 173, 175, 179, 171, 180, 181, 181B, 181A, 181C, 182A, 182B, 182C, 183, 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, AND WAS GROUPED WITH THIS SURVEY AREA DUE TO LOCATION	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation:	
	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707
Survey Area: U		Survey Unit N/A
Survey Unit Description: RBA ROOMS 167, 169, 173, 175, 179, 171, 180, 181, 181B, 181A, 181C, 182A, 182B, 182C, 183, 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, BUT WAS GROUPED WITH THIS SURVEY AREA DUE TO LOCATION		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>93 <u>unbiased</u> survey points uniformly distributed within the survey area</p> <p>10 <u>biased</u> survey points at the following locations</p> <ul style="list-style-type: none"> - points near areas with potential for contamination, including doorways/walkways/main throughfares - other areas based on RCT judgement <p>CEILINGS/WALLS > 2 meters</p> <p>40 <u>biased</u> survey points with focus on following areas</p> <ul style="list-style-type: none"> - Walls behind process lines - Ceilings above GB's/Hoods/B-Boxes - Ceilings/walls adjacent to c-cells/tents - Stained or discolored areas - Areas around pipe or other penetrations <p>EQUIPMENT</p> <p>30 <u>biased</u> survey points on equipment with focus on the following types of areas/locations</p> <ul style="list-style-type: none"> - Gloveboxes/Hoods/B-Boxes or other equipment which have visible leaks, stains, or spills beneath them - Exhaust ducts - Analytical/process/repack equipment - Permanent storage racks for tools - Survey points on top of overhead piping (where locations are accessible through reach tools) 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

Page superseded 3/16/00 Chg #4

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002	Building 707	
Survey Area: U	Survey Unit N/A	
Survey Unit Description: RBA ROOMS 167, 169, 173, 175, 179, 171, 180, 181, 181B, 181A, 181C, 182A, 182B, 182C, 183, 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, BUT WAS GROUPED WITH THIS SURVEY AREA DUE TO LOCATION		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	FLOORS/WALLS < 2 meters 275 unbiased survey points uniformly distributed within each room, taken as follows - 11 survey points per room (3 floor/2 wall) 25 biased survey points at the following locations - 1 point in each room as determined by RCT CEILINGS/WALLS > 2 meters 250 biased surveys (2/wall, 2/ ceiling) with focus on following areas - Walls behind process lines - Ceilings above GB's/Hoods/B-Boxes - Ceilings/walls adjacent to c-cells/tents - Stained or discolored areas - Areas around pipe or other penetrations EQUIPMENT 60 biased survey points on equipment with two or more samples per room with focus on the following types of areas - Gloveboxes/Hoods/B-Boxes or other equipment which have visible leaks, stains, or spills beneath them - Exhaust ducts - Analytical/process/repack equipment - Storage racks for tools - 5 survey points on top of overhead piping (where locations are accessible through reach tools)	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4

Page superseded 9/3/40 Change # 4

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707
Survey Area: U		Survey Unit N/A
Survey Unit Description: RBA ROOMS 167, 169, 173, 175, 179, 171, 180, 181, 181B, 181A, 181C, 182A, 182B, 182C, 183, 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, BUT WAS GROUPED WITH THIS SURVEY AREA DUE TO LOCATION		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 300 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 3 biased (paint) media samples taken as follows: <ul style="list-style-type: none"> - 1 sample near contaminated scale in room 196 - 1 sample near a process drain - 1 sample collected from the tool crib (room 188) 	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707
Survey Area: U		Survey Unit N/A
Survey Unit Description: RBA ROOMS 167, 169, 173, 175, 179, 171, 180, 181, 181B, 181A, 181C, 182A, 182B, 182C, 183, 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, BUT WAS GROUPED WITH THIS SURVEY AREA DUE TO LOCATION		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 103 1 m ² surface scans shall be taken at each location identified for surface activity measurements Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 3 biased (paint) media samples taken as follows - 1 sample near contaminated scale in room 196 - 1 sample near a process drain - 1 sample collected from the tool crib (room 188)	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Pg superseded 01/18/00 *Aug #2*

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: U	Survey Unit N/A
Survey Unit Description RBA ROOMS 167, 169, 173, 175, 179, 171, 180, 181, 181B, 181A, 181C, 182A, 182B, 182C, 183, 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, BUT WAS GROUPED WITH THIS SURVEY AREA DUE TO LOCATION	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media "</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: U	Survey Unit N/A
Survey Unit Description: RBA ROOMS 167, 169, 173, 175, 179, 171, 180, 181, 181B, 181A, 181C, 182A, 182B, 182C, 183, 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, BUT WAS GROUPED WITH THIS SURVEY AREA DUE TO LOCATION	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

Pg superseded 01/18/00 Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: U	Survey Unit N/A
Survey Unit Description. RBA ROOMS 167, 169, 173, 175, 179, 171 180 181, 181B, 181A, 181C 182A 182B 182C, 183, 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, BUT WAS GROUPED WITH THIS SURVEY AREA DUE TO LOCATION	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS <ol style="list-style-type: none"> Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: U	Survey Unit N/A
Survey Unit Description* RBA ROOMS 167, 169, 173, 175 179, 171, 180 181 181B, 181A 181C, 182A 182B, 182C 183 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, BUT WAS GROUPED WITH THIS SURVEY AREA DUE TO LOCATION	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS <ol style="list-style-type: none"> Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Building 707	
Survey Area: U	Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>		
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	1	db
Total Activity Surveys	1	db
Exposure Rate Surveys	NA	NA
Removable Surveys	1	db
Media Samples	SES	KRM
Volumetric Samples	NA	NA
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	1	db
Total Activity Surveys	1	db
Exposure Rate Surveys	NA	NA
Removable Surveys	1	db
Media Samples	SES	KRM
Volumetric Samples	NA	NA
Comments		

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____

Building. _____

Location* _____

Purpose _____

RWP # _____

Date _____

Time _____

RCT _____

Print name _____

Signature _____

Emp # _____

RCT _____

Print name _____

Signature _____

Emp # _____

PRL #: _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1. _____	_____	_____	_____	26 _____	_____	_____	_____
2 _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33 _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

Date Reviewed: _____

RS Supervision: _____

Print Name _____

Signature _____

Emp # _____

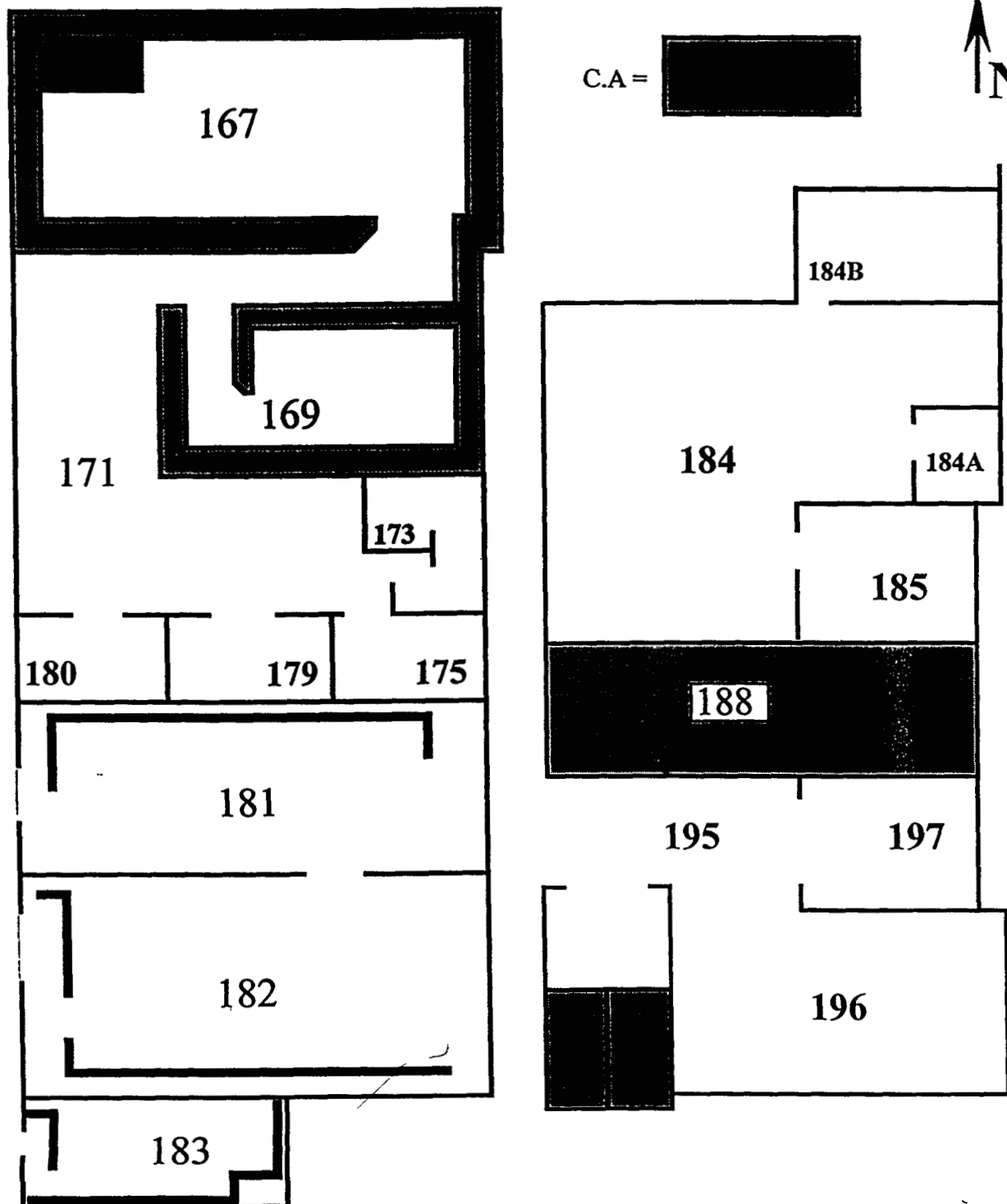
308/466

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RADIOLOGICAL SAFETY

Drawing Showing Survey Points

707



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>949</u>	Serial # <u>837</u>	Serial # <u>1518</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.5 cpm</u>	Bkg <u>0.0 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>156 dpm</u>	MDA <u>82 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u></u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>N/A</u>
Bkg <u>64 cpm</u>	Bkg <u>62 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>1213 dpm</u>	MDA <u>119.5 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location RBA Rooms Survey Area U
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 3-21-00 Time 1630Comments Floor / Walls < 2 meters Unbiased survey points1 m² scans, 1 minute pats and swipes See map for locations3 bkg counts alpha < 8 cpm (electra)**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Floor	0	-56	12	16	Floor	0	-28	18
2	Floor	0	-48	-6	17	Wall	0	-60	18
3	Floor	3	36	36	18	Wall	0	-48	30
4	Wall	0	-48	-6	19	^{94 3240} Floor Wall	3	-44	12
5	Wall	3	-20	12	20	Floor	0	-8	48
6	Floor	6	-16	30	21	Floor	0	-28	24
7	Floor	0	4	0	22	Floor	0	-56	60
8	Wall	0	-40	12	23	Wall	0	-8	48
9	Wall	0	-36	12	24	Wall	0	-60	48
10	^{94 3240} Floor Wall	0	28	0	25	Floor	3	-60	36
11	Floor	0	-20	24	26	Floor	0	-16	42
12	Floor	0	-20	12	27	Wall	0	-8	54
13	Wall	0	-64	54	28	Floor	0	-36	24
14	Floor	0	-68	24	29	Wall	0	-96	24
15	Floor	0	-32	6	30	Floor	0	56	30

Date Reviewed 4 3 00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

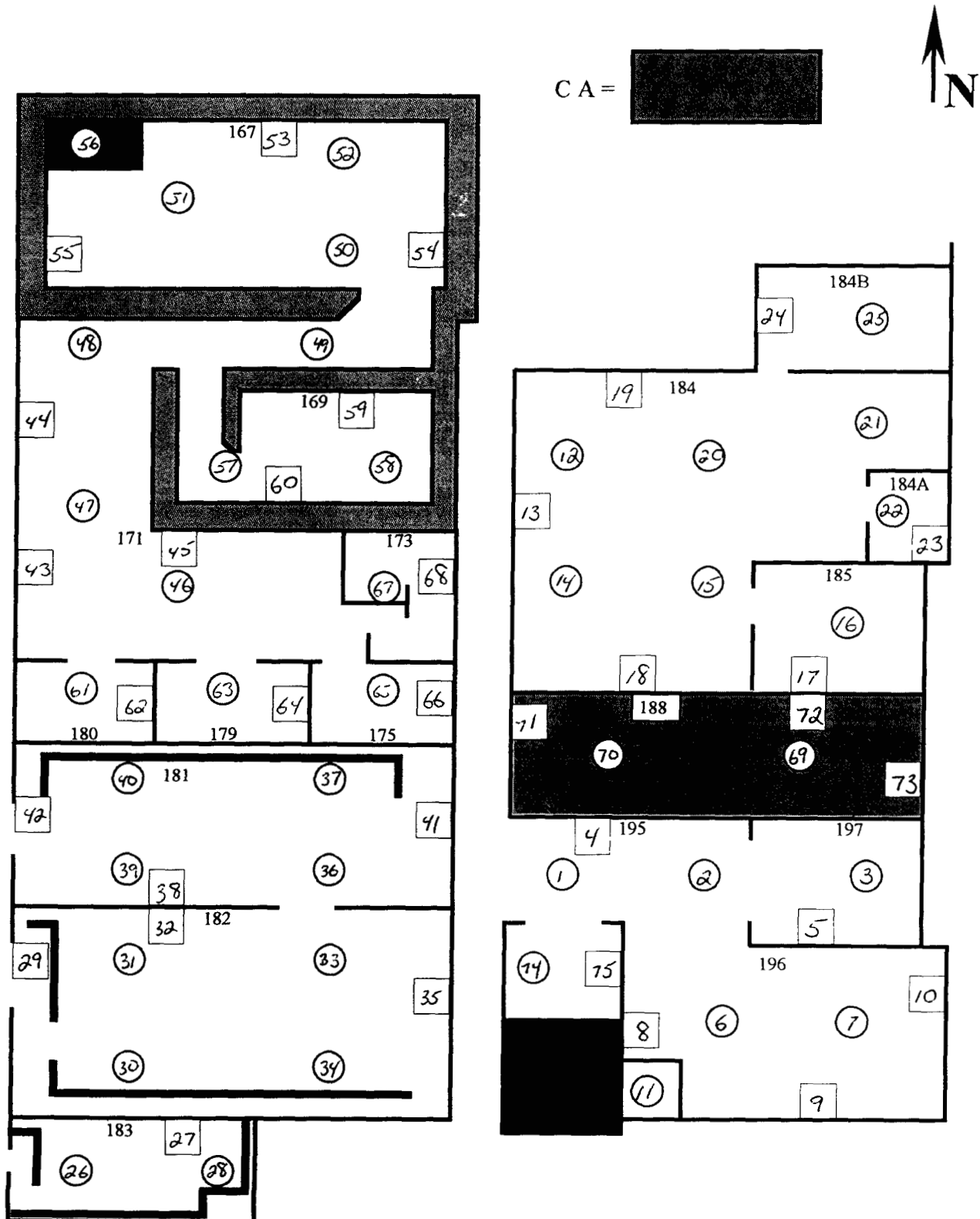
Drawing Showing Survey Points

Point #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	Floor	0	-92	24	61	Floor	0	-52	18
32	Wall	3	-36	66	62	Wall	0	-44	36
33	Floor	0	-68	54	63	Floor	0	-112	0
34	Floor	0	-32	30	64	Wall	0	-68	18
35	Wall	0	-12	12	65	Floor	0	-56	6
36	Floor	0	-4	36	66	Wall	0	-40	0
37	Floor	0	64	96	67	Floor	0	-56	12
38	Wall	0	-60	48	68	Wall	0	-12	30
39	Floor	0	-52	36	69	Floor	0	8	-18
40	Floor	0	-8	0	70	Floor	0	0	36
41	Wall	0	-80	12	71	Wall	0	-52	18
42	Wall	0	-40	18	72	Wall	0	44	6
43	Wall	0	-44	0	73	Wall	3	0	-18
44	Wall	0	-12	18	74	Floor	6	4	30
45	Wall	0	-56	24	75	Wall	3	-40	18
46	Floor	0	-68	18	76	END OF SURVEY			
47	Floor	0	-16	30	77				
48	Floor	3	-40	6	78				
49	Floor	0	-44	12	79				
50	Floor	0	-28	36	80				
51	Floor	0	-24	36	81				
52	Floor	0	-28	48	82				
53	Wall	3	-64	0	83	N/A			
54	Wall	0	-16	30	84				
55	Wall	3	24	48	85				
56	Floor	0	4	36	86				
57	Floor	0	-64	6	87				
58	Floor	0	-8	18	88				
59	Wall	3	-40	36	89				
60	Wall	0	-76	24	90				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

707 RBA ROOMS



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>879</u>	Serial # <u>837</u>	Serial # <u>158</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.6 cpm</u>	Bkg <u>0.4 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>163 dpm</u>	MDA <u>148 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u></u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>N/A</u>
Bkg <u>56 cpm</u>	Bkg <u>50 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>1141 dpm</u>	MDA <u>108.4 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707 RBA OFFICES U1
 Location South Corr. 3-20-00 Survey Area 3-20-00
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 3-16-00 Time 1630Comments Floor / Walls < 2 meters Unbiased survey points1 m² scans, 1 minute pats and swipes See map for locations3 bkgd counts alpha electra < 8 cpm (0,0,2)**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1.	Floor	0	-88	18	16	wall	0	32	30
2.	Floor	0	12	12	17	Floor	0	-4	48
3.	wall	0	4	24	18	wall	0	84	54
4.	wall	0	16	24	19	End of Survey			
5.	wall	0	28	42	20				
6.	Floor	0	-4	12	21				
7.	wall	3	4	6	22				
8.	Floor	0	48	24	23				
9.	Floor	6	-4	30	24				
10.	wall	0	16	42	25				
11.	Floor	3	-20	54	26				
12.	Floor	3	64	36	27				
13.	wall	0	4	42	28				
14.	Floor	0	0	30	29				
15.	Floor	3	-20	30	30				

Date Reviewed: 3-16-00 RS Supervision:

Print Name

Signature

Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

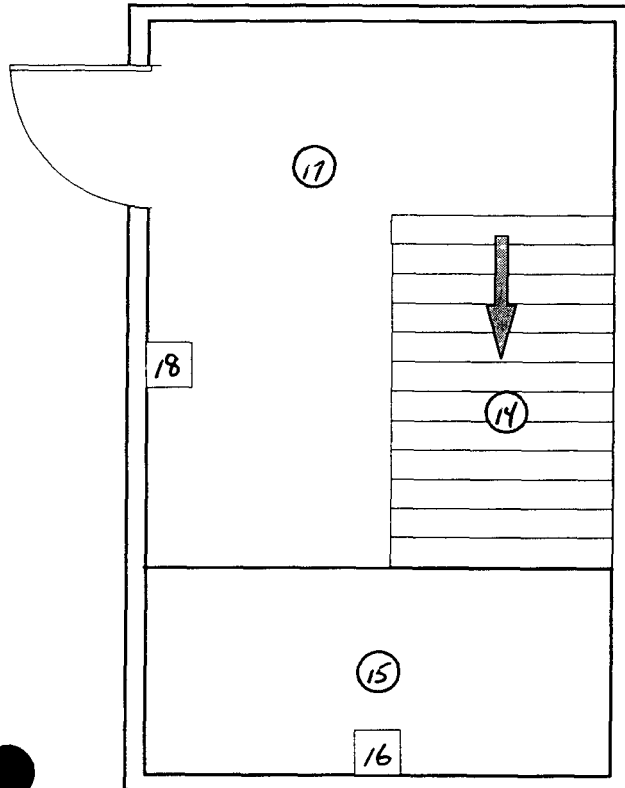
Drawing Showing Survey Points

1st. FLOOR

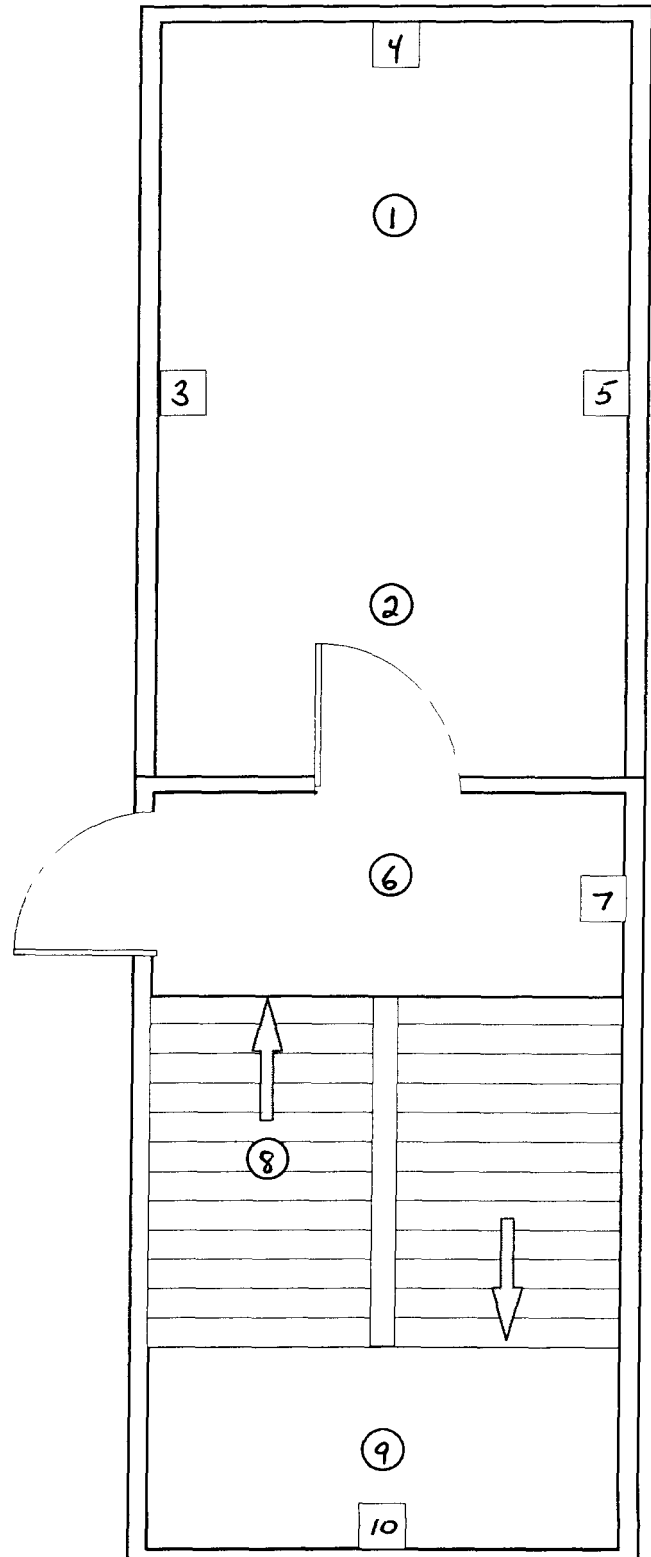
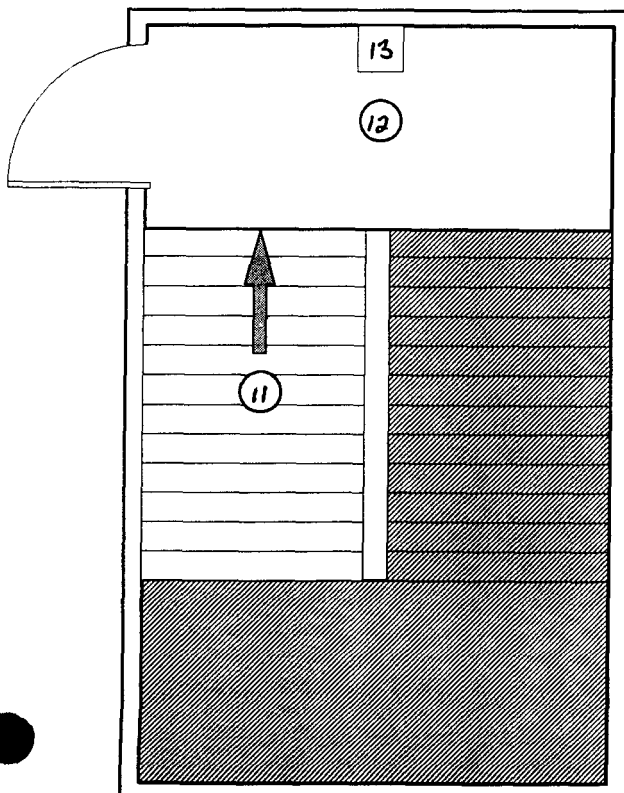
Stairwell

SE Corner

3rd FLOOR



2nd. FLOOR



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.3 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>30 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>13.9 dpm</u>	MDA <u>12.9 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u></u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>N/A</u>
Bkg <u>63 cpm</u>	Bkg <u>54 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>120.4 dpm</u>	MDA <u>112.3 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location RBA Rooms Survey Area A
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 3-24-00 Time 1630Comments Floor / Walls < 2 meters Biased survey points1 m² scans, 1 minute pats and swipes See map for locations3 bkgd counts alpha electra < 8cpm**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Floor by SCALE	9	-12	30	16				
2	Floor	0	32	54	17				
3	Floor	0	16	30	18				
4	Floor	0	84	42	19				
5	Floor	3	-40	0	20				
6	Floor	0	64	18	21				
7	Floor	9	68	24	22				
8	Floor	3	28	18	23				
9	Floor	3	4	24	24				
10	Floor	0	-28	24	25				
11	END OF SURVEY				26				
12					27				
13					28				
14					29				
15					30				

Date Reviewed 4-3-00 RS Supervision

Print Name

Signature

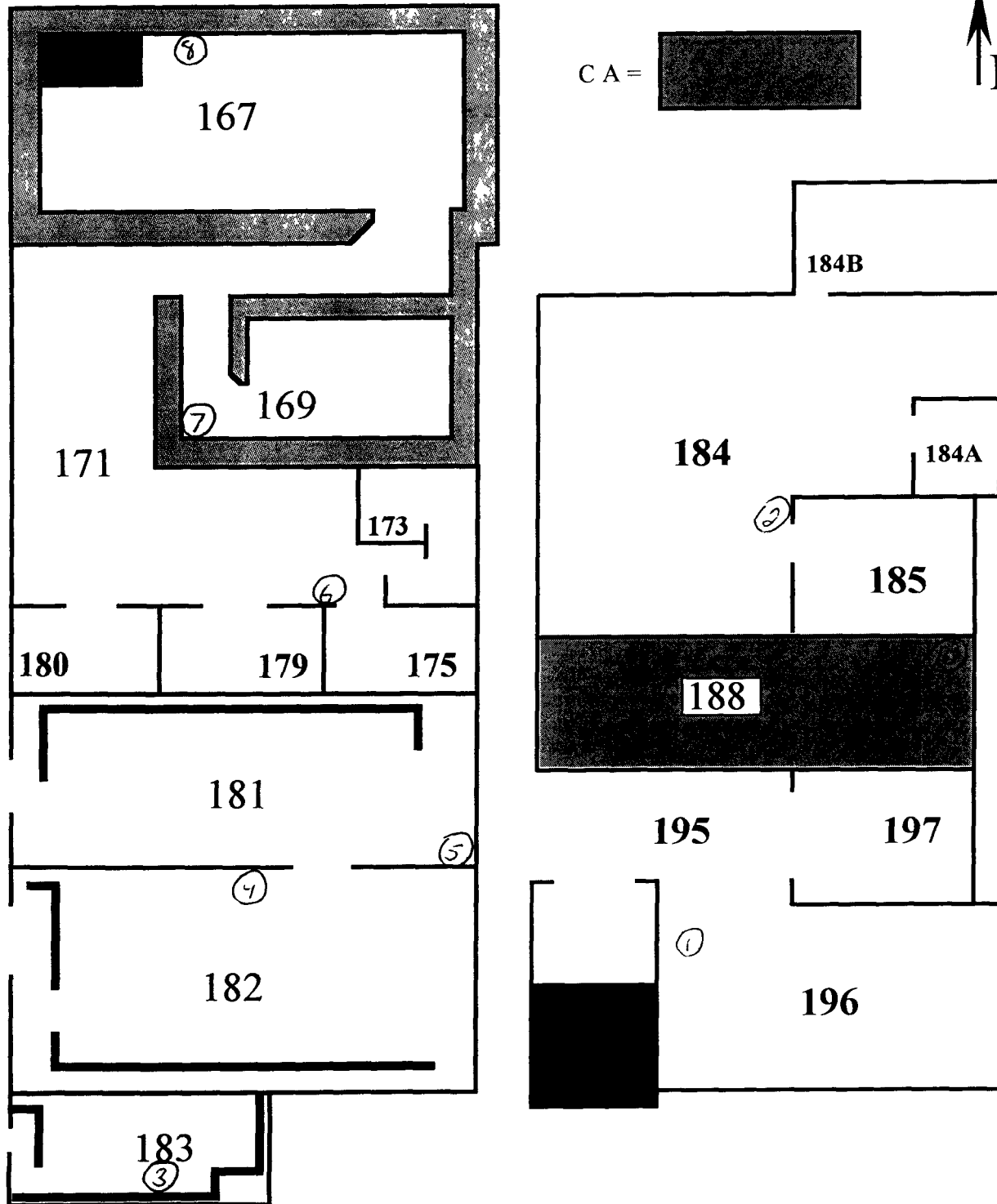
Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

707 CAL GAMMA / SHIPPING



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # 837	Serial # 1518
Cal Due 4-10-00	Cal Due 5-17-00	Cal Due 6-29-00
Bkg 0.5 cpm	Bkg 0.3 cpm	Bkg 2.0 cpm
Efficiency 33%	Efficiency 33%	Efficiency 17%
MDA 156 dpm	MDA 139 dpm	MDA 94 dpm
Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model BC-4	Model
Serial # 872	Serial # 833	Serial #
Cal Due 4-12-00	Cal Due 7-14-00	Cal Due
Bkg 5.9 cpm	Bkg 5.5 cpm	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA 116.9 dpm	MDA 113.2 dpm	MDA

Survey Type Contamination

Building 707
 Location RBA Rooms Survey Area U
 Purpose Reconnaissance Level Characterization

RWP # 00 707-1204

Date 3-22-00 Time 1630

RCT Hersey
 Print name Signature

RCT S. S. S.
 Print name Signature

Comments Equipment Biased survey points

1 minute pats and swipes See map for locations

3 bkg Counts alpha electron < 8 cpm

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	9452200 Vent storage rack	0	12	54	16	Vent	0	56	30
2	Vent	0	-8	90	17	vent	3	0	6
3	Pipe	0	-36	18	18	Vent	3	88	18
4	Vent	0	8	54	19	vent	0	16	66
5	vent	0	-36	120	20	Pipes	3	-36	0
6	Vent	3	-24	84	21	vent	0	-20	102
7	Box	0	16	18	22	Vent	3	-4	252
8	Vent	0	-28	120	23	Pipes	0	28	30
9	Vent	0	-40	48	24	scale	0	-40	42
10	Vent	0	-16	18	25	Doors	0	16	60
11	Vent	3	28	72	26	Vent	0	56	66
12	Vent	3	0	0	27	vent	3	-28	60
13	Vent	3	20	18	28	vent	0	28	102
14	Vent	3	-36	60	29	Elevator	3	-40	18
15	Vent	3	-32	18	30	Elevator	0	-28	6

Date Reviewed 4-3-00

RS Supervision:

Print Name

Signature

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # 837	Serial # 1233
Cal Due 4-10-00	Cal Due 5-17-00	Cal Due 5-11-00
Bkg 0.3 cpm	Bkg 0.2 cpm	Bkg 3.0 cpm
Efficiency 33%	Efficiency 33%	Efficiency 17%
MDA 139 dpm	MDA 129 dpm	MDA 94 dpm
Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model BC-4	Model
Serial # 872	Serial # 833	Serial #
Cal Due 4-12-00	Cal Due 7-14-00	Cal Due N/A
Bkg 6.3 cpm	Bkg 5.4 cpm	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA 1204 dpm	MDA 1123 dpm	MDA

Survey Type Contamination

Building 707
 Location 38A Room Survey Area U
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 3-24-00 Time 1630

R

R

Comments Ceiling / Walls > 2 meters Biased survey points

1 minute pats and swipes See map for locations

3 bkgd counts alpha electra 48 cpm

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Wall	0	-84	42	16	Wall	3	60	12
2	Wall	0	-16	12	17	Wall	6	700	12
3	Wall	6	36	18	18	Wall	3	36	6
4	Wall	0	16	-6	19	Ceiling	0	-20	18
5	Wall	0	-48	54	20	Ceiling	0	-28	30
6	Wall	0	-28	18	21	Ceiling	0	28	0
7	Wall	0	36	66	22	Ceiling	0	8	6
8	Wall	0	20	24	23	Ceiling	0	-28	18
9	Wall	3	8	18	24	Ceiling	0	24	30
10	Wall	0	-36	0	25	Ceiling	0	0	6
11	Wall	0	28	60	26	Ceiling	0	-28	42
12	Wall	0	4	72	27	Ceiling	3	16	24
13	Wall	0	56	18	28	Ceiling	0	12	12
14	Wall	0	36	30	29	Ceiling	0	-4	18
15	Wall	0	44	0	30	Ceiling	0	20	60

Date Reviewed. 4.3.00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Type #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	Ceiling	3	-56	0	61				
32	Ceiling	3	8	0	62				
33	Ceiling	6	-20	-12	63				
34	Ceiling	0	-32	-18	64				
35	Ceiling	0	0	42	65				
36	Ceiling	0	8	24	66				
37	Ceiling	0	-32	0	67				
38	Ceiling	0	-32	0	68				
39	Wall	0	-36	6	69				
40	Wall	3	-52	0	70				
41	End of Survey				71				
42					72				
43					73				
44					74				
45					75				
46					76				
47					77				
48					78				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

N A

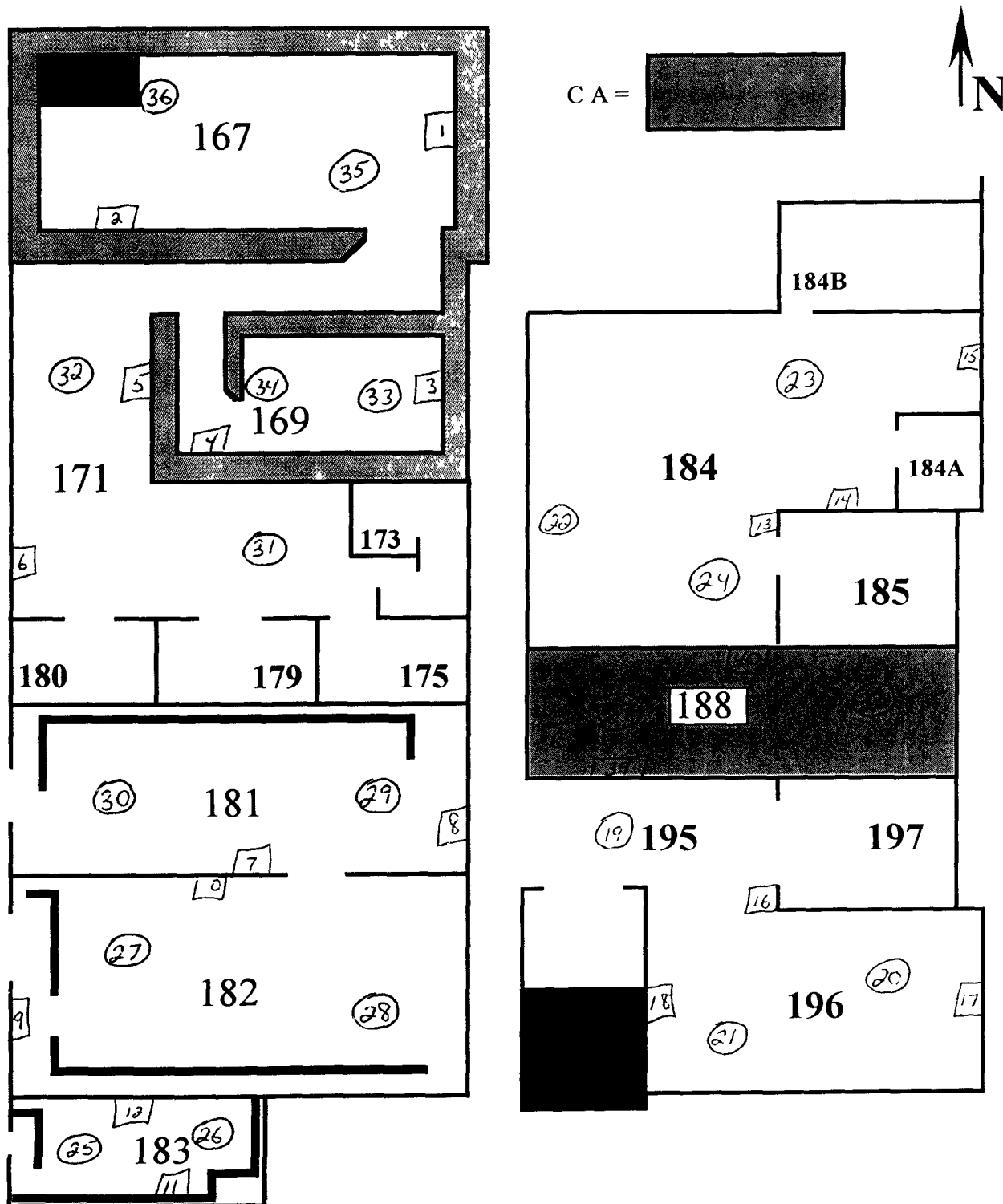
N A

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

707 CAL GAMMA / SHIPPING



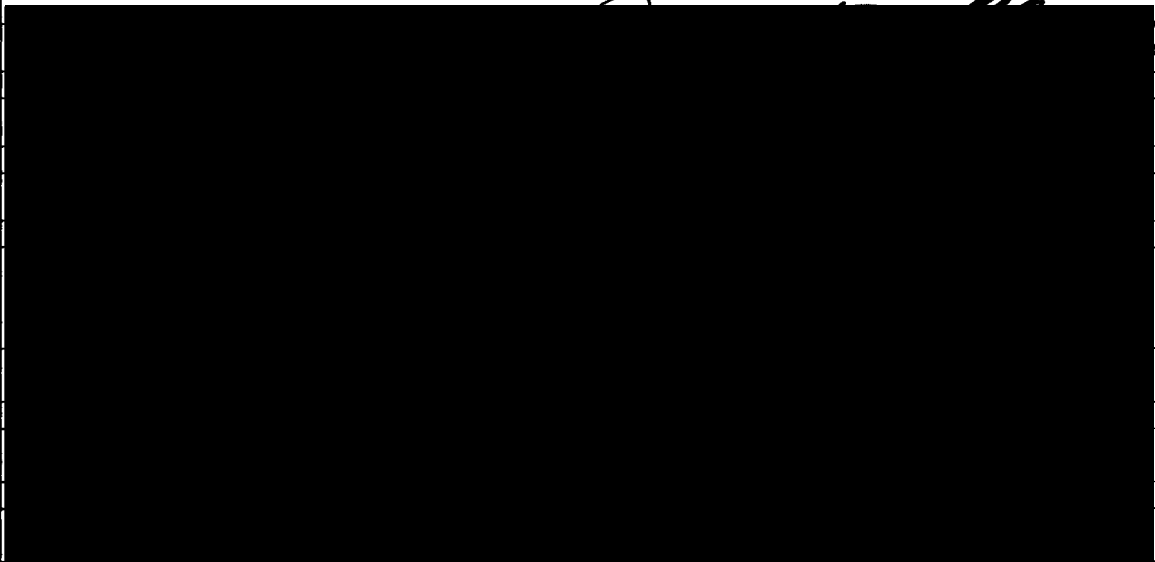
SURVEY PACKAGE TRACKING FORM

[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area V		Survey Unit N/A		Area (m ²) 921	
Survey Unit Description CORRIDORS H, J, K, L, S, T, U, V NORTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY TO CORRIDOR H ROOMS 164, 166, 170 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS					
Survey Type			Classification		
RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
110	108	30	3	0	120
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707		
Survey Area: V	Survey Unit: N/A		
Survey Unit Description: CORRIDORS H, J, K, L, S, T, U, V NORTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY TO CORRIDOR H ROOMS 164, 166, 170 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS			
Building Information:			
Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/>			
Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/>			
Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>			
Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input type="checkbox"/> Other <input type="checkbox"/> _____			
Justification for Classification: N/A			
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads			
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads			
Isolation Controls:			
Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>			
Labeling Requirements: NONE			
Survey Package Implementation:			
			
RESS Manager Printed Name		Employee #	RESS Manager Signature
			Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID 99-0002		Building 707
Survey Area V		Survey Unit N/A
Survey Unit Description CORRIDORS H, J, K, L, S, T, U, V NORTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY TO CORRIDOR H ROOMS 164, 166, 170 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>110 unbiased survey points uniformly distributed throughout the specified corridors (3 per floor, 2 per wall section – module walls to be treated separately For rooms 164, 166, and 170 take 3 per floor & 2 per wall</p> <p>10 biased survey points at the following locations</p> <ul style="list-style-type: none"> - 1 point near 2 of the 4 doors on each module adjacent to the corridors <p>CEILINGS/WALLS > 2 meters</p> <p>98 biased surveys with focus on following areas</p> <ul style="list-style-type: none"> - Ceilings/walls adjacent to storage vaults - Stained or discolored areas - Areas around pipe or other penetrations <p>EQUIPMENT</p> <p>30 biased survey points on equipment with one or more samples from</p> <ul style="list-style-type: none"> - Surveys points at exhaust ducts in corridors - Survey points on top of overhead piping (where locations are accessible through reach tools) - Survey points where pipes/equipment penetrate dropped ceilings (where present) - Other equipment as determined by RCT 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707
Survey Area V		Survey Unit: N/A
Survey Unit Description. CORRIDORS H, J, K, L, S, T, U, V NORTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY TO CORRIDOR H AND ROOMS 164, 166, 170 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 120 1 m ² surface scans shall be taken at each location identified for surface activity measurements Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 3 biased (paint) media samples taken as follows - 1 sample each near an entrance (determined by RCT) to two modules (2 samples total) - 1 sample near an eyewash station or other floor drain	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Pg superseded 01/08/00 Chg #6

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: V	Survey Unit N/A
Survey Unit Description: CORRIDORS H, J, K, L, S, T, U, V NORTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY TO CORRIDOR H AND ROOMS 164, 166, 170 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
<p>NOTE 1. Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: V	Survey Unit N/A
Survey Unit Description. CORRIDORS H, J, K, L, S, T, U, V NORTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY TO CORRIDOR H AND ROOMS 164, 166, 170 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media "</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

By superseded per JY 01/18/00 Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: V	Survey Unit N/A
Survey Unit Description: CORRIDORS H, J, K, L, S, T, U, V NORTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY TO CORRIDOR H ROOMS 164, 166, 170 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS <ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: V	Survey Unit N/A
Survey Unit Description: CORRIDORS H, J, K, L, S, T, U, V NORTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY TO CORRIDOR H ROOMS 164, 166, 170 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 707
Survey Area: V		Survey Unit N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>		
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	S	db
Total Activity Surveys	S	db
Exposure Rate Surveys	NA	NA
Removable Surveys	S	db
Media Samples	QES	EDM
Volumetric Samples	NA	NA
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	S	db
Total Activity Surveys	S	db
Exposure Rate Surveys	NA	NA
Removable Surveys	S	db
Media Samples	QES	EDM
Volumetric Samples	NA	NA
Comments		

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____

Building _____

Location* _____

Purpose _____

RWP # _____

Date _____

Time _____

RCT _____

Print name _____

Signature _____

Emp # _____

RCT _____

Print name _____

Signature _____

Emp # _____

PRL #: _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1 _____	_____	_____	_____	26 _____	_____	_____	_____
2 _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33 _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

Date Reviewed: _____

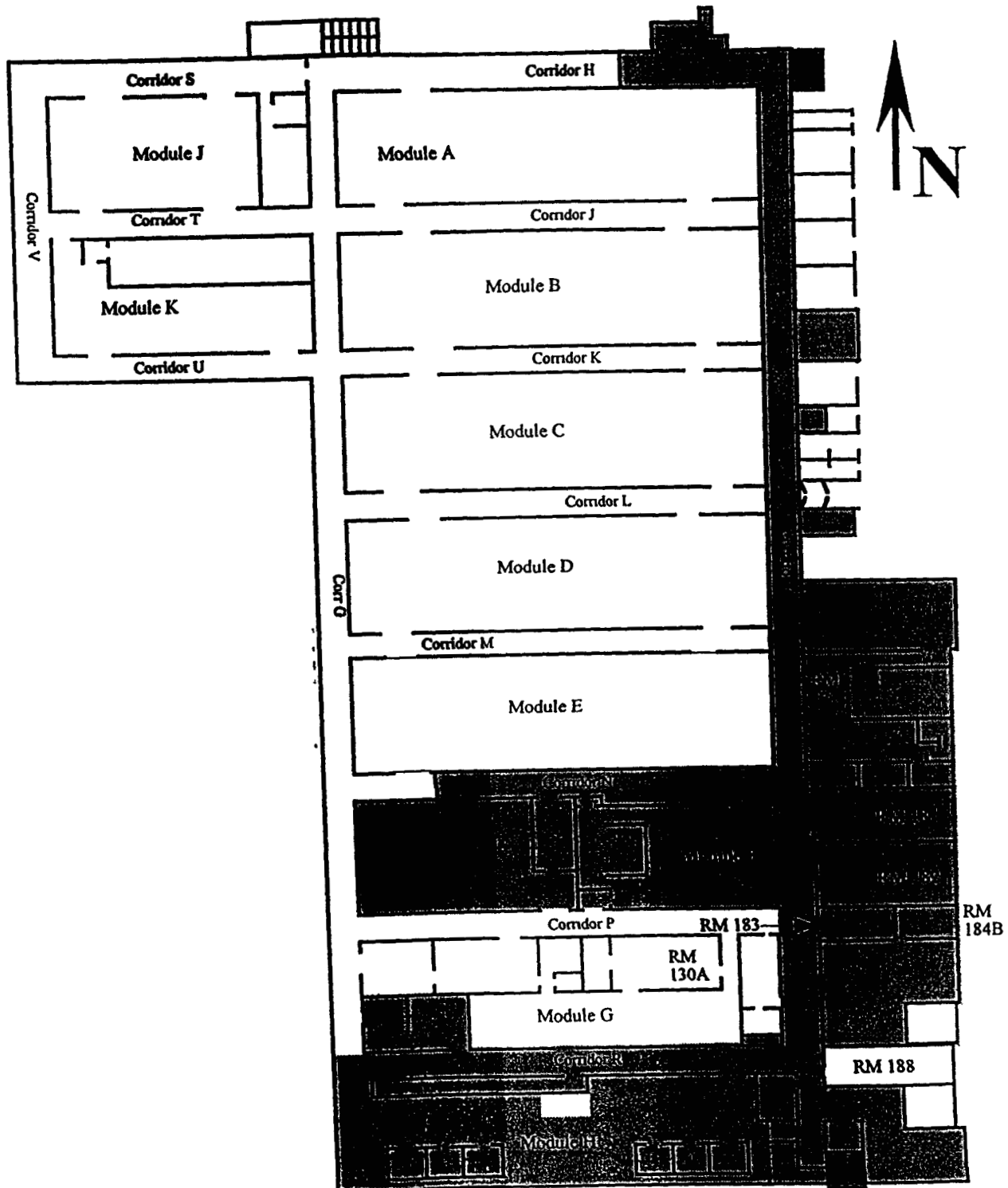
RS Supervision: _____

Print Name _____

Signature _____

Emp # _____

RADIOLOGICAL SAFETY
Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA****Survey Type Contamination**Building 707Location Corridors Survey Area VPurpose Reconnaissance Level CharacterizationRWP # 00-707-1204

RCT

Print name / Signature / Emp #

Print name / Signature / Emp #

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1389</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.3 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>1 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.7%</u>
MDA <u>139 dpm</u>	MDA <u>11.5 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>3265</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>59 cpm</u>	Bkg <u>52 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>21.0%</u>
MDA <u>116.9 dpm</u>	MDA <u>110.4 dpm</u>	MDA <u>94 dpm</u>

Comments Floor / Walls < 2 meters Unbiased survey points1 m² scans, 1 minute pats and swipes See map for locations.3 background counts alpha ~8cpm (1,1,1)**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F	0	-12	0	16	F	0	0	6
2	F	0	-48	12	17	F	3	-20	-6
3	F	0	60	-12	18	F	0	-36	0
4	F	0	-8	-6	19	F	3	48	28
5	F	0	-24	12	20	F	0	-40	24
6	F	0	0	18	21	F	0	-24	6
7	F	0	0	78	22	F	0	0	0
8	F	3	-36	168	23	F	0	-24	12
9	F	0	-32	108	24	F	0	-4	-6
10	F	0	4	12	25	F	0	80	-18
11	F	12	-12	1170	26	F	3	0	-6
12	F	3	-4	24	27	F	6	-36	18
13	F	3	-4	0	28	F	3	-52	6
14	F	3	-48	-6	29	F	3	20	18
15	F	0	36	0	30	F	3	-52	18

Date Reviewed. 3-21-00 RS Supervision. _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Pipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	F	0	16	18	61	W < 2	0	4	18
32	F	0	-8	0	62	W < 2	3	-4	12
33	F	0	8	12	63	W < 2	0	-16	36
34	F	0	0	6	64	W < 2	0	36	12
35	F	0	-16	6	65	W < 2	0	-28	18
36	F	0	20	66	66	W < 2	0	0	12
37	F	3	-16	6	67	W < 2	0	32	12
38	F	0	0	18	68	W < 2	0	0	30
39	F	0	54	18	69	W < 2	0	4	0
40	F	0	-40	12	70	W < 2	0	-4	6
41	W < 2	3	-40	0	71	W < 2	0	20	-6
42	W < 2	0	12	-12	72	W < 2	0	-8	-6
43	W < 2	0	46	18	73	W < 2	0	4	0
44	W < 2	0	-12	30	74	W < 2	0	0	6
45	W < 2	0	-52	24	75	W < 2	0	-36	12
46	W < 2	0	-12	6	76	W < 2	0	52	18
47	W < 2	0	20	6	77	W < 2	0	-16	12
48	W < 2	0	24	0	78	W < 2	3	44	-12
49	W < 2	3	-92	-12	79	W < 2	3	-8	-6
50	W < 2	3	40 32	0	80	W < 2	0	-16	0
51	W < 2	6	36	0	81	W < 2	0	-16	6
52	W < 2	0	-8	6	82	W < 2	0	-16	36
53	W < 2	0	54	12	83	W < 2	0	-4	-6
54	W < 2	0	12	18	84	W < 2	3	0	-6
55	W < 2	0	-48	30	85	W < 2	3	-4	-12
56	W < 2	3	-40	12	86	W < 2	0	4	-12
57	W < 2	0	4	36	87	W < 2	0	32	-12
58	W < 2	0	0	120	88	W < 2	3	-4	18
59	W < 2	3	-20	108	89	W < 2	0	32	0
60	W < 2	3	-20	156	90	W < 2	0	52	0

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SURVEY

Drawing Showing Survey Points

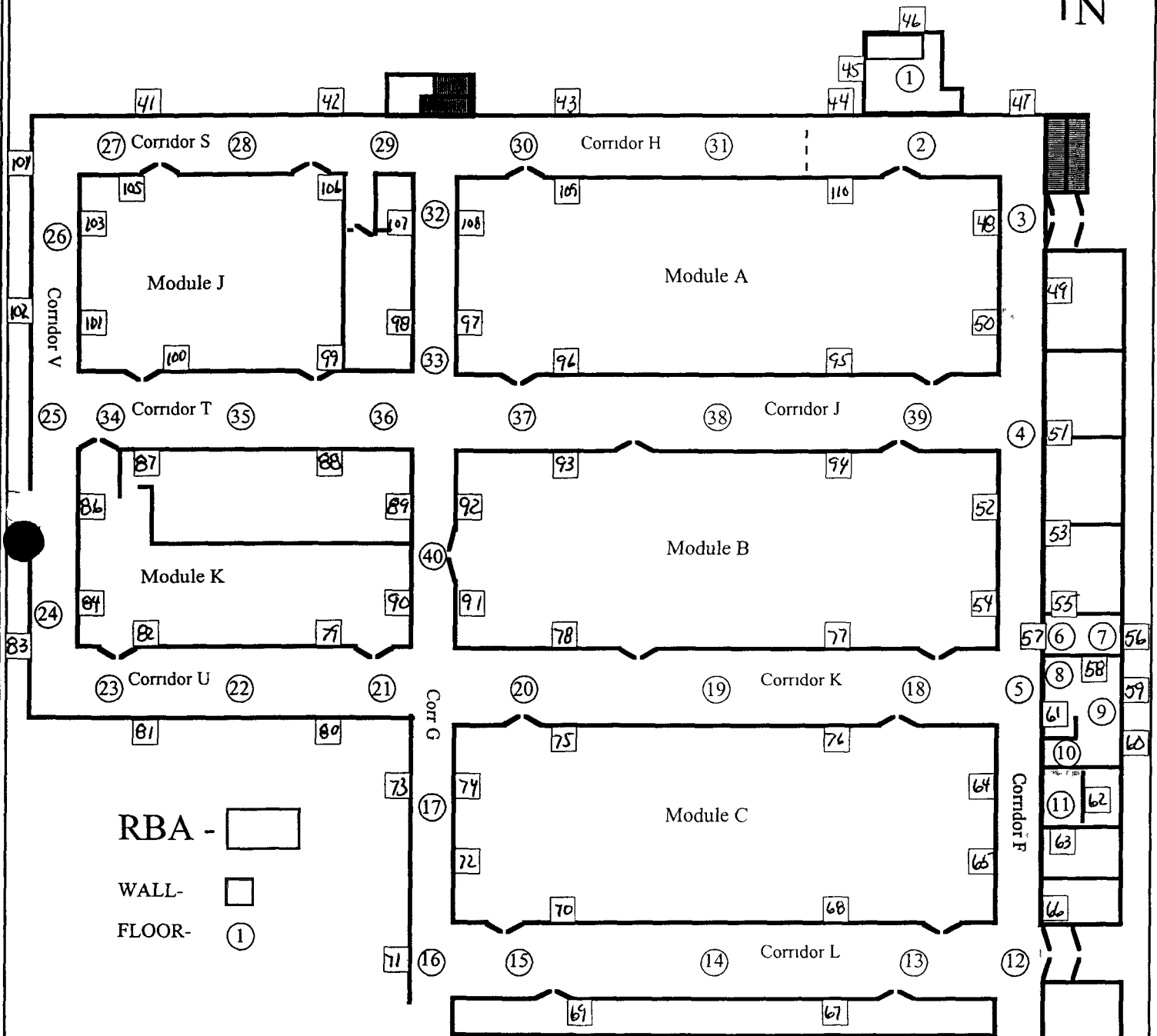
Point #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
91	W < 2	0	-12	0	121				
92	W < 2	0	36	24	122				
93	W < 2	3	-4	36	123				
94	W < 2	0	40	18	124				
95	W < 2	0	-16	18	125				
96	W < 2	0	-8	-6	126				
97	W < 2	3	-8	24	127				
98	W < 2	0	-28	12	128				
99	W < 2	0	36	0	129				
100	W < 2	0	49	-12	130				
101	W < 2	3 4	-4	-12	131				
102	W < 2	3	4	-6	132				
103	W < 2	0	-8	+18	133				
104	W < 2	3	8	0	134				
105	W < 2	0	0	12	135	N/A			
106	W < 2	3	32	18	136				
107	W < 2	0	-40	0	137				
108	W < 2	3	-4	6	138				
109	W < 2	3	0	18	139				
110	W < 2	0	4	0	140				
111	END OF SURVEY				141				
112					142				
113					143				
114					144				
115					145				
116	N/A				146				
117					147				
118					148				
119					149				
120					150				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

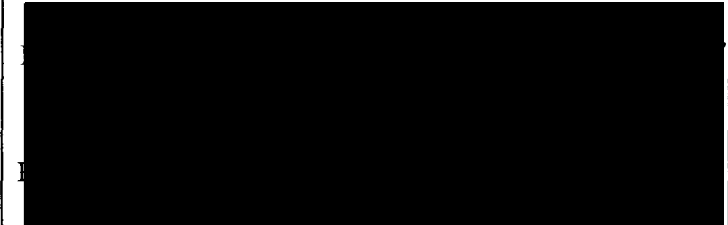
RADIOLOGIC

Drawing Showing Survey Points

CORRIDORS



110 - Total Survey Points

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA****Survey Type Contamination**Building 707Location Corridors Survey Area ☒Purpose Reconnaissance Level CharacterizationRWP # 00-707-1204Date 2-29-00 Time 1500

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1389</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.5 cpm</u>	Bkg <u>0.3 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.7%</u>
MDA <u>156 dpm</u>	MDA <u>139 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NE Tech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>3265</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>49 cpm</u>	Bkg <u>52 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>21.0%</u>
MDA <u>107.5 dpm</u>	MDA <u>110.4 dpm</u>	MDA <u>94 dpm</u>

Comments Floor / Walls < 2 meters Biased survey points1 m² scans, 1 minute pats and swipes See map for locations3 alpha bkgd counts electra < 8cpm (0,0,4)**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F - AT DOOR	3	24	54	16				
2	F " "	3	56	48	17				
3	F " "	0	24	24	18				
4	F " "	3	36	48	19				
5	F " "	3	24	12	20				
6	F " "	6	20	60	21				
7	F " "	0	68	18	22				
8	F " "	3	4	36	23				
9	F " "	0	36	18	24				
10	F " "	0	16	12	25				
11	END OF SURVEY				26				
12					27				
13					28				
14					29				
15					30				

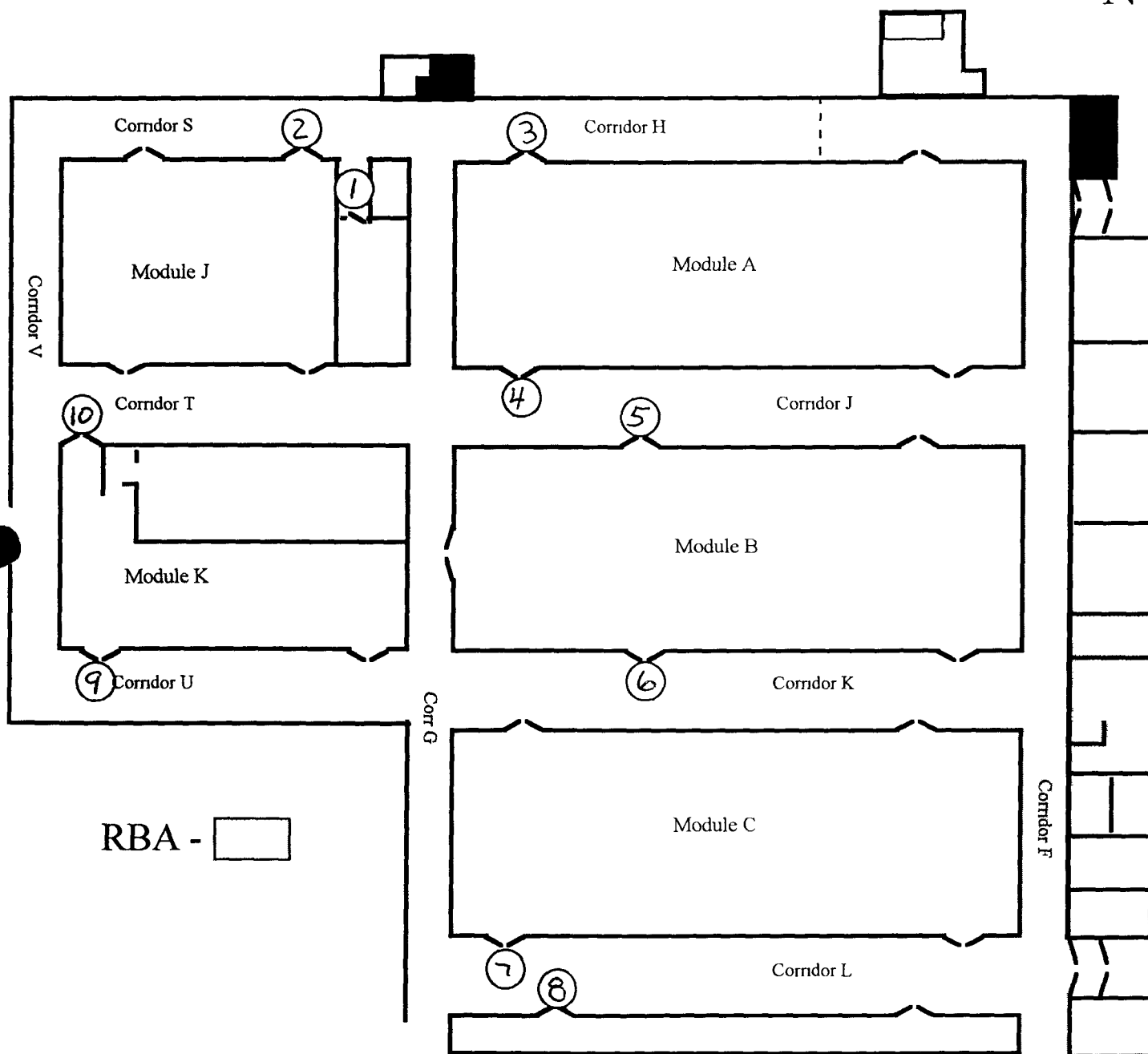
Date Reviewed. 3 21 00 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

CORRIDORS



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1518</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-12-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.6 cpm</u>	Bkg <u>0.4 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>163 dpm</u>	MDA <u>148 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u></u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>N/A</u>
Bkg <u>56 cpm</u>	Bkg <u>50 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>1141 dpm</u>	MDA <u>1084 dpm</u>	MDA <u></u>

Survey Type. Contamination

Building 707
 Location North Corr Survey Area ☒
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 3-16-00 Time 1630Comments Floor / Walls < 2 meters Biased survey points1 m² scans, 1 minute pats and swipes See map for locations3 alpha bkgd counts electra 28cpm (2,2,3)note contained Fixed α on Map**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Wall	0	-20	96	16	Floor	3	8	54
2	Floor	3	32	60	17	Floor	3	-12	36
3	Floor	6	-20	90	18	Floor	0	4	24
4	Wall	0	48	36	19	Wall	0	-8	60
5	Wall	0	16	42	20	Floor	0	32	30
6	Floor	0	32	60	21	Floor	3	24	66
7	Floor	0	8	66	22	Wall	3	32	18
8	Wall	0	48	54	23	Floor	12	8	48
9	Floor	0	-20	6	24	Floor	0	-24	54
10	Wall	0	-8	24	25	Wall	6	-4	48
11	Floor	3	16	24	26	END of Survey			
12	Wall	0	72	60	27				
13	Floor	0	32	66	28				
14	Wall	0	32	48	29				
15	Wall	3	-12	42	30				

Date Reviewed: 3 21-00 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

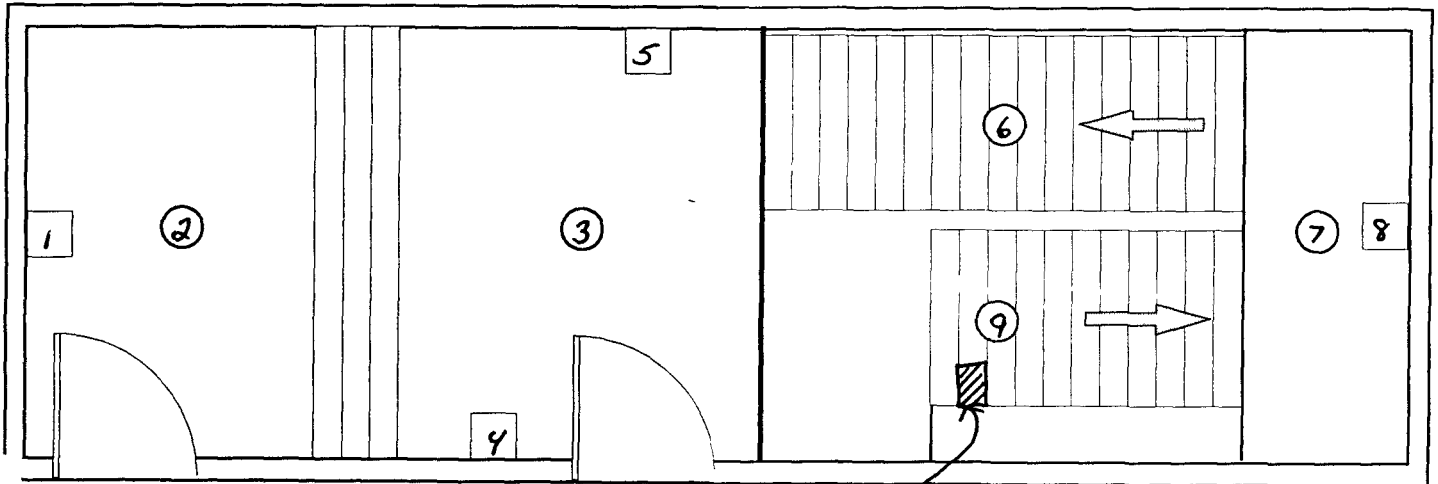
Stairwell

NW Corner

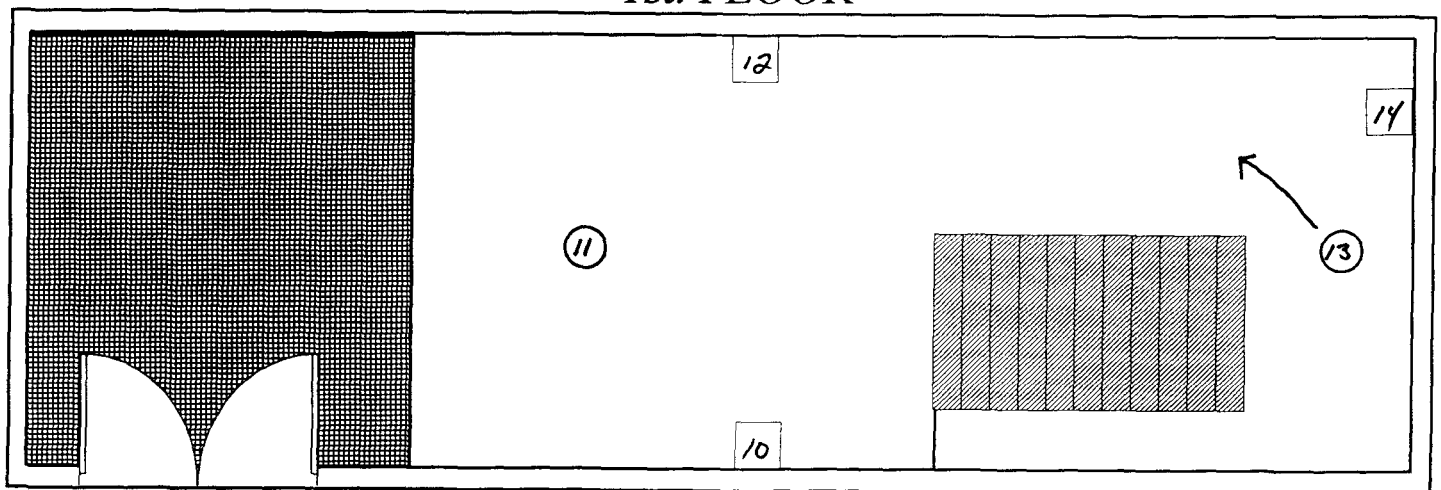
Rm 200



2nd. FLOOR



1st. FLOOR



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

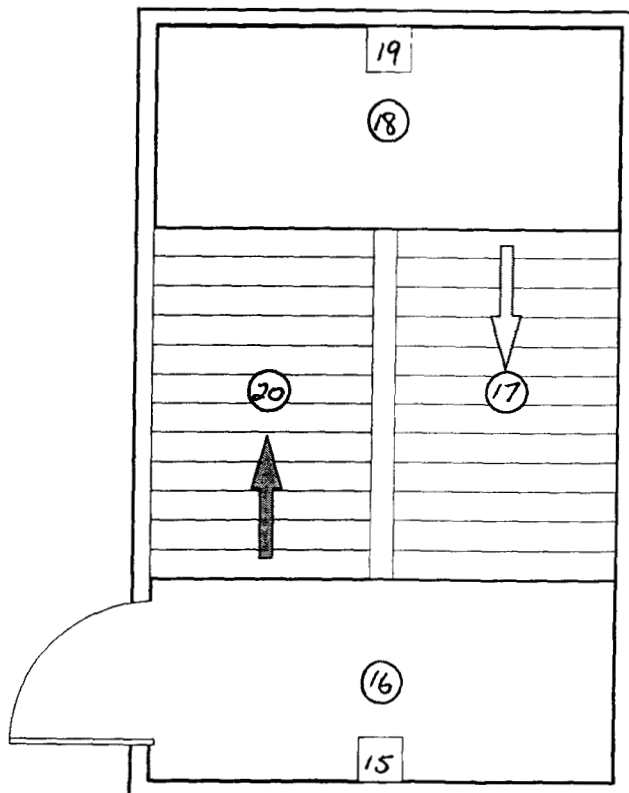
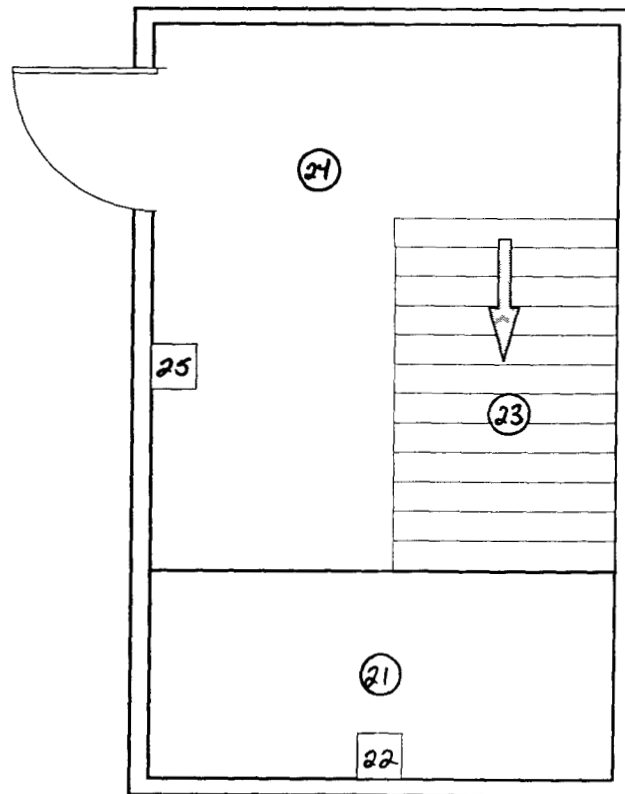
Drawing Showing Survey Points

1st. FLOOR



Stairwell

NE Corner



2nd. FLOOR

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3120</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>4-26-00</u>
Bkg <u>0.7 cpm</u>	Bkg <u>0.3 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.0%</u>
MDA <u>16.9 dpm</u>	MDA <u>13.9 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>1389</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>4.8 cpm</u>	Bkg <u>5.1 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>20.7%</u>
MDA <u>106.5 dpm</u>	MDA <u>109.4 dpm</u>	MDA <u>94 dpm</u>

Survey Type Contamination

Building 707
 Location Corridor Survey Area ☒
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 3-1-00 Time 1600

RC

RCT

Print name / Signature / Emp #

Comments Equipment Biased survey points1 minute pats and swipes See map for locations3 bkgd counts alpha electra 2.8cpm (1,2,3)Equipment Corridor 10 of 30 All Below Ceiling Tile**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	E Vent	0	20	54	16				
2	E Vent	3	-40	186	17				
3	E Vent	0	-4	192	18				
4	Process Waste Pipe	0	48	24	19				
5	E Vent	0	36	90	20				
6	E Vent	0	-4	48	21				
7	E Vent	0	16	42	22				
8	E Vent	9	-4	384	23				
9	E Firephone	3	-24	12	24	N/A			
10	E Vent	3	-20	84	25				
11	END OF SURVEY				26				
12					27				
13	N/A				28				
14					29				
15									

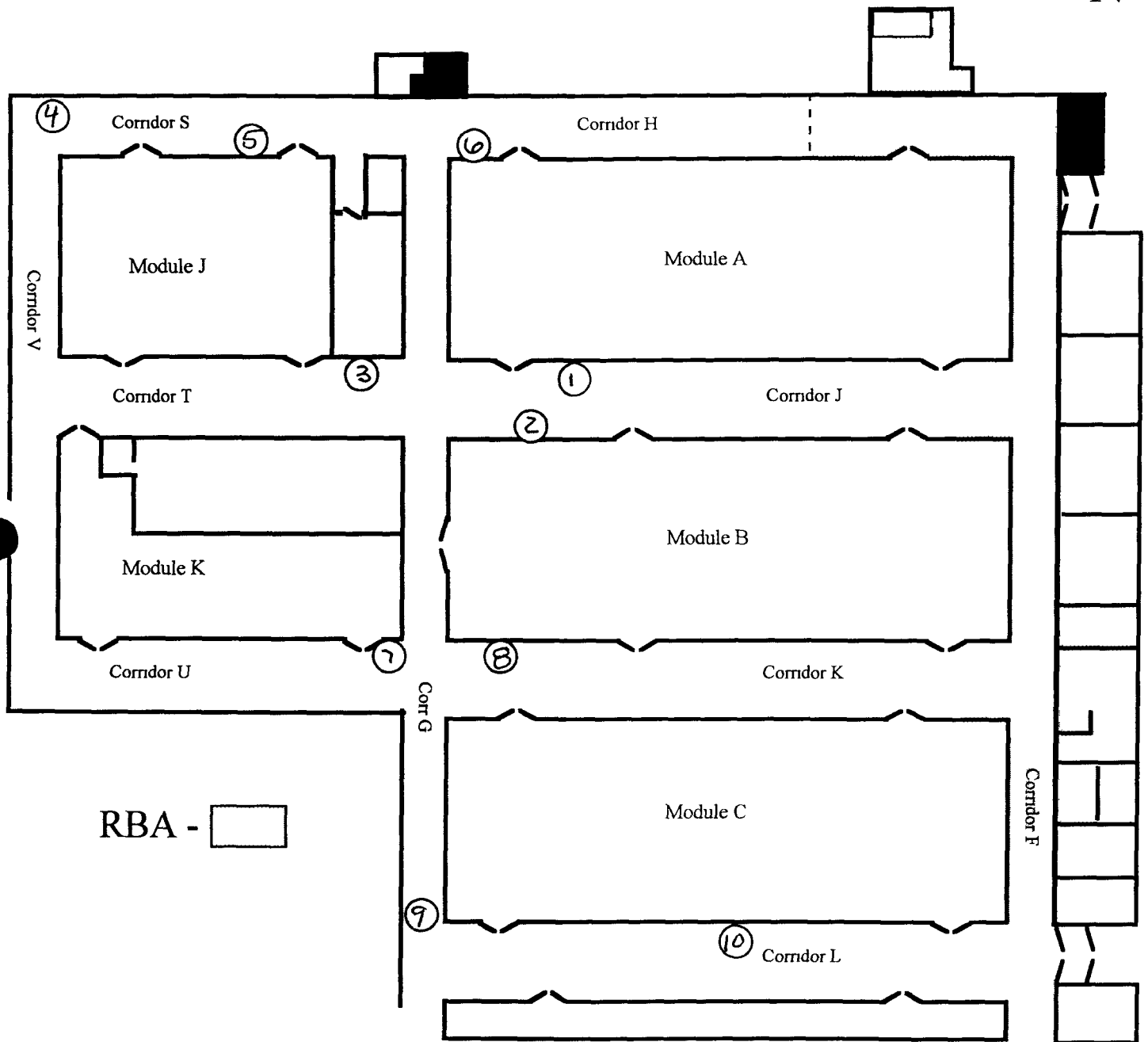
Date Reviewed: 3-21-00 RS Supervisor

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

CORRIDORS



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3120</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>4-26-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>5 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>115 dpm</u>	MDA <u>129 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>833</u>	Serial # <u>872</u>	Serial # <u></u>
Cal Due <u>2-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>N/A</u>
Bkg <u>54 cpm</u>	Bkg <u>53 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>112.3 dpm</u>	MDA <u>111.3 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location North Corridors Survey Area ☒
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 3-20-00 Time 1630

RC 


RCT Print name / Signature / Emp #

Comments Equipment Biased survey points
1 minute pats and swipes See map for locations

Continuation From Survey dated 3-1-00

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1.	<u>Vent</u>	0	-40	6	16	<u>Vent</u>	3	56	84
2.	<u>Vent</u>	0	-4	36	17	<u>Vent</u>	0	-20	84
3.	<u>Electrical panel</u>	0	-16	-24	18	<u>Vent</u>	3	20	90
4.	<u>Box</u>	0	80	-6	19	<u>Vent</u>	0	28	36
5.	<u>F/O Box</u>	0	-4	-6	20	<u>Vent</u>	0	-40	72
6.	<u>Lockers</u>	3	-72	6	21	<u>End of Survey</u> <u>N/A</u>			
7.	<u>Box</u>	0	-4	-6	22				
8.	<u>Eye Wash</u>	0	-40	60	23				
9.	<u>Vent</u>	0	4	66	24				
10.	<u>Tray</u>	3	-20	12	25				
11.	<u>Vent</u>	3	-24	24	26				
12.	<u>Vent</u>	3	-4	0	27				
13.	<u>Vent</u>	0	44	96	28				
14.	<u>Vent</u>	3	-8	0	29				
15.	<u>Vent</u>	0	-12	102	30				

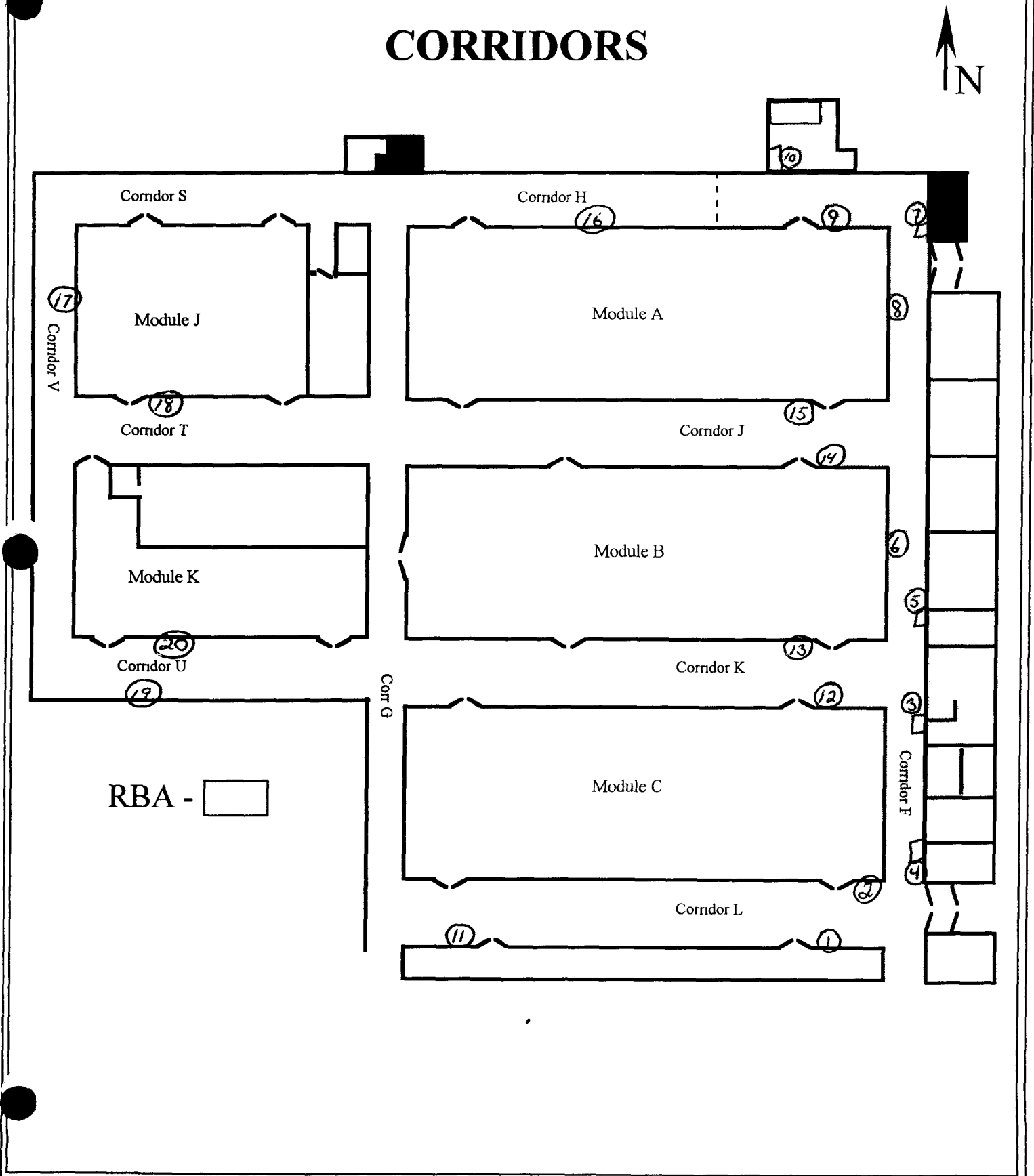
Date Reviewed: 4-26-00 RS Supervision: 

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

CORRIDORS



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.6 cpm</u>	Bkg <u>0.4 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>16.3 dpm</u>	MDA <u>14.8 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>1233</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>N/A</u>
Bkg <u>5.6 cpm</u>	Bkg <u>5.0 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>17%</u>
MDA <u>1141 dpm</u>	MDA <u>1084 dpm</u>	MDA <u>94 dpm</u>

Survey Type ContaminationBuilding 707Location North CorridorsSurvey Area ☒Purpose Reconnaissance Level CharacterizationRWP # 00-707-1204Date 3-16-00 Time 1630Comments Ceiling / Walls > 2 meters Biased survey points1 minute pats and swipes See map for locations3 bkad alpha counts electra = 8 cpm (1,1,2)continuation to survey dated 2-28-00RBA only

43 pts not performed
 due to being inaccessible
 above ceiling tiles - +
 this area posted ARA
 for entry.

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1.	Ceiling vent	3	-8	18	16	END OF Survey			
2.	Ceiling Vent	3	28	12	17				
3.	Ceiling Vent	0	40	6	18				
4.	Ceiling vent	3	12	12	19				
5.	Ceiling	0	-36	6	20				
6.	wall	3	4	12	21				
7.	wall	6	40	6	22				
8.	wall	0	-4	12	23				
9.	wall	0	-4	6	24				
10.	wall	0	-8	6	25				
11.	wall	3	-24	-6	26				
12.	wall	0	16	12	27				
13.	wall	0	-24	12	28				
14.	wall	0	16	6	29				
15.	wall	0	12	6	30				

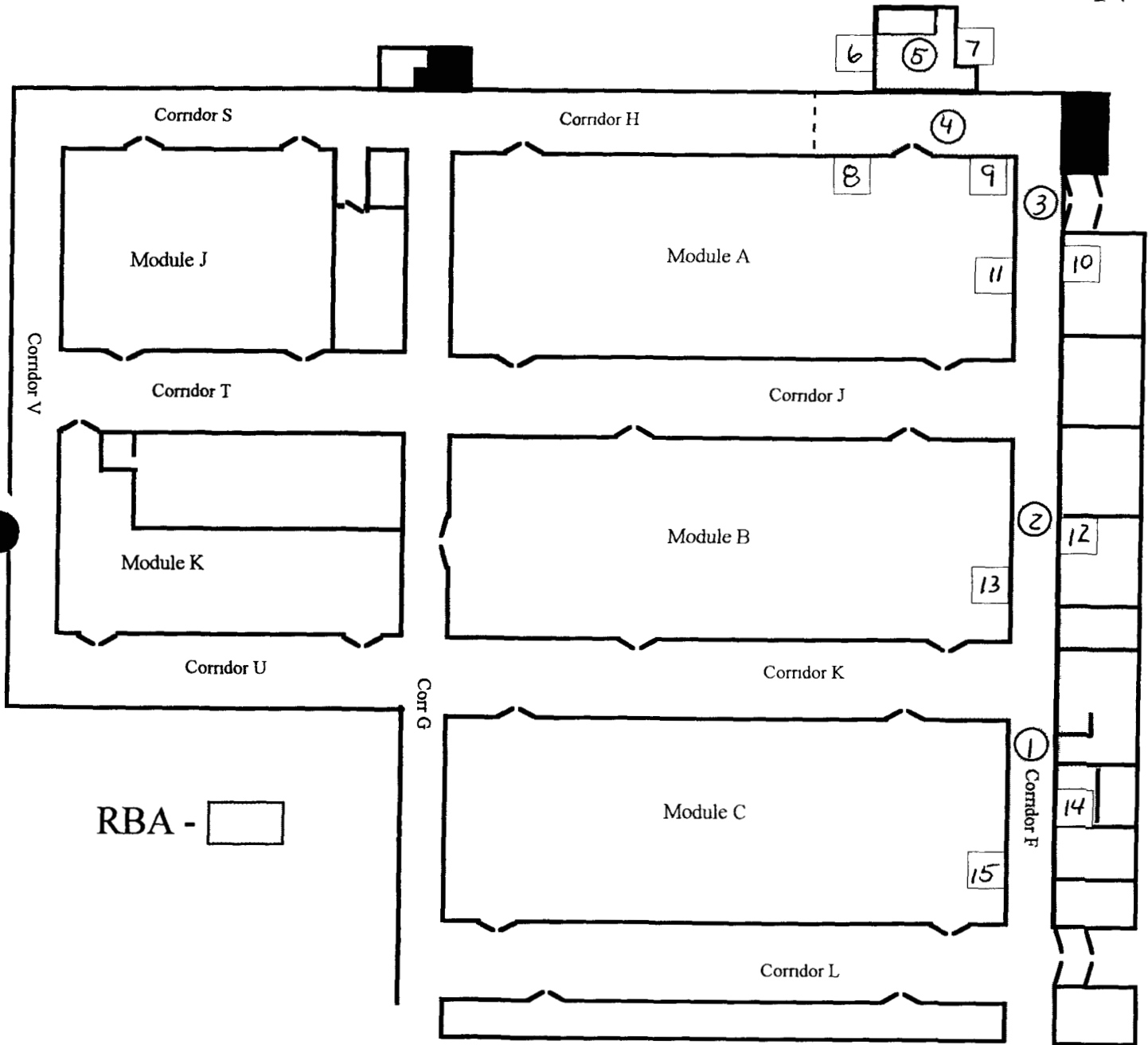
Date Reviewed: 3-21-00 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

CORRIDORS



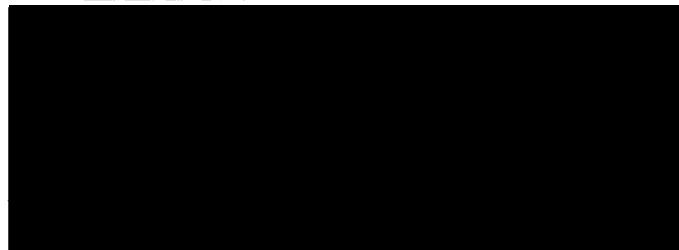
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.5 cpm</u>	Bkg <u>0.3 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.63%</u>
MDA <u>156 DPM</u>	MDA <u>13.9 DPM</u>	MDA <u>94 DPM</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u></u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>N/A</u>
Bkg <u>49 cpm</u>	Bkg <u>52 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>1675 DPM</u>	MDA <u>1104 DPM</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location corridors North Survey Area ☒
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 2-28-00 Time 1600Comments Ceiling / Walls > 2 meters Biased survey points

1 minute pats and swipes See map for locations 3 bkgd counts alpha electra - 2 cpm (0, 2, 3)
False ceiling tiles CA - only
using correction factors Sac-4 = x3 BC-4 = x4 Electra alpha = x6

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	<u>10' 22m</u>	<u>0</u>	<u>68</u>	<u>84</u>	16	<u>u' "</u>	<u>12</u>	<u>0</u>	<u>36</u>
2	<u>u' "</u>	<u>0</u>	<u>-52</u>	<u>18</u>	17	<u>u' "</u>	<u>0</u>	<u>20</u>	<u>42</u>
3	<u>u' "</u>	<u>0</u>	<u>-8</u>	<u>30</u>	18	<u>u' "</u>	<u>3</u>	<u>-20</u>	<u>48</u>
4	<u>u' "</u>	<u>0</u>	<u>-8</u>	<u>12</u>	19	<u>u' "</u>	<u>0</u>	<u>-24</u>	<u>12</u>
5	<u>u' "</u>	<u>0</u>	<u>-28</u>	<u>36</u>	20	<u>u' "</u>	<u>0</u>	<u>8</u>	<u>60</u>
6	<u>u' "</u>	<u>3</u>	<u>4</u>	<u>18</u>	21	<u>u' "</u>	<u>0</u>	<u>8</u>	<u>30</u>
7	<u>u' "</u>	<u>0</u>	<u>40</u>	<u>18</u>	22	<u>u' "</u>	<u>3</u>	<u>36</u>	<u>18</u>
8	<u>u' "</u>	<u>3</u>	<u>-36</u>	<u>24</u>	23	<u>u' "</u>	<u>0</u>	<u>12</u>	<u>48</u>
9	<u>u' "</u>	<u>3</u>	<u>-8</u>	<u>30</u>	24	<u>u' "</u>	<u>0</u>	<u>-8</u>	<u>12</u>
10	<u>u' "</u>	<u>0</u>	<u>8</u>	<u>24</u>	25	<u>u' "</u>	<u>0</u>	<u>24</u>	<u>24</u>
11	<u>u' "</u>	<u>0</u>	<u>56</u>	<u>18</u>	26	<u>u' "</u>	<u>0</u>	<u>28</u>	<u>48</u>
12	<u>u' "</u>	<u>0</u>	<u>-32</u>	<u>30</u>	27	<u>u' "</u>	<u>0</u>	<u>-48</u>	<u>48</u>
13	<u>u' "</u>	<u>0</u>	<u>-44</u>	<u>60</u>	28	<u>u' "</u>	<u>0</u>	<u>-28</u>	<u>18</u>
14	<u>u' "</u>	<u>3</u>	<u>-36</u>	<u>18</u>	29	<u>u' "</u>	<u>0</u>	<u>-60</u>	<u>42</u>
15	<u>u' "</u>	<u>0</u>	<u>24</u>	<u>48</u>	30	<u>u' "</u>	<u>0</u>	<u>-36</u>	<u>60</u>

Date Reviewed 3-21-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

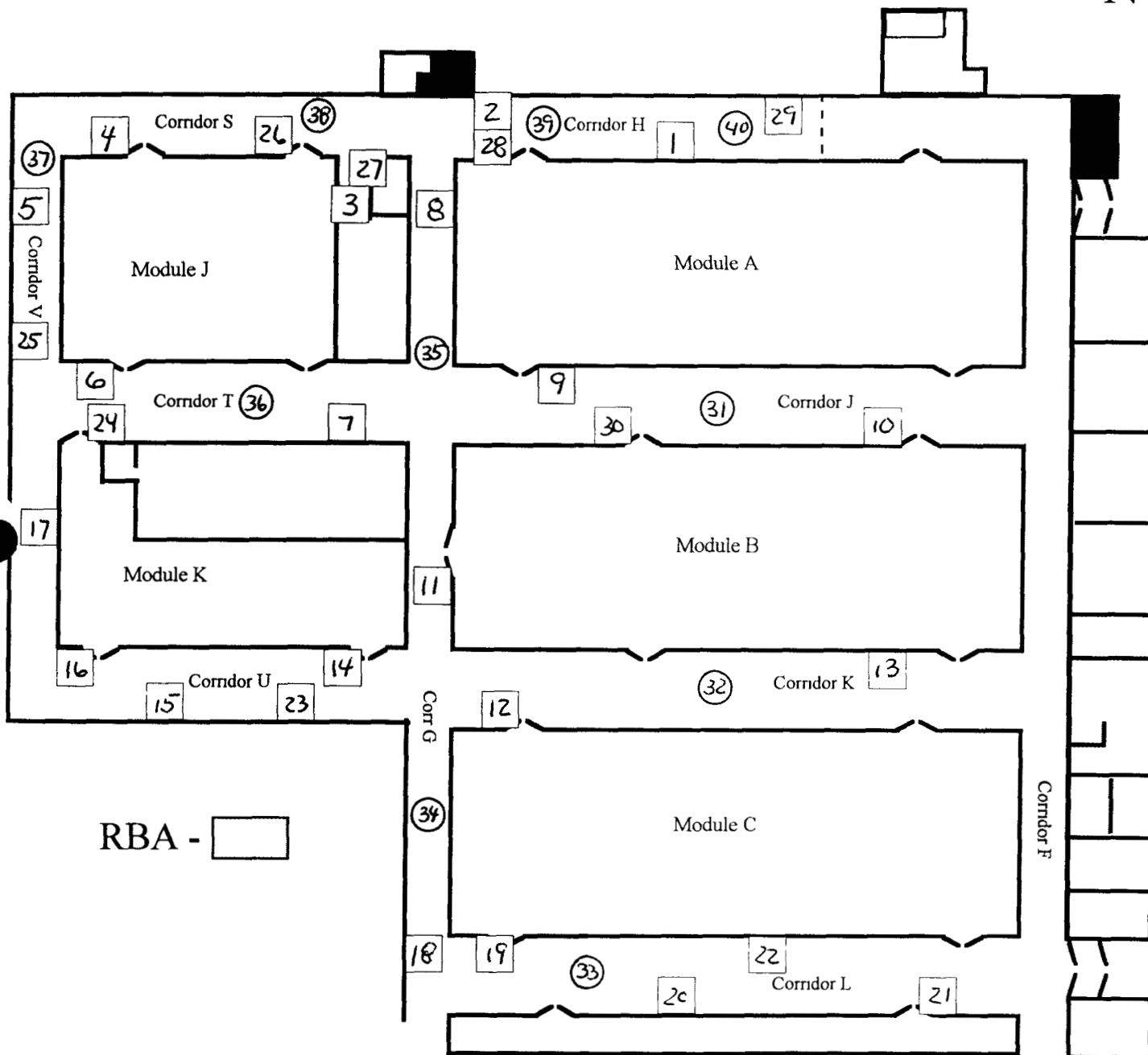
Type #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	Ceiling Tiles	3	52	72	61				
32	Ceiling Tiles	3	-16	18	62				
33	Ceiling Tiles	3	16	30	63				
34	Ceiling Tiles	0	-52	54	64				
35	Ceiling Tiles	3	-16	36	65				
36	Ceiling Tiles	6	-44	36	66				
37	Ceiling Tiles	0	44	30	67				
38	Ceiling Tiles	9	4	36	68				
39	ceiling tiles	0	-16	54	69				
40	Ceiling Tiles	3	8	42	70				
41					71				
42					72				
3					73				
44	N/A				74				
45					75				
46					76				
47					77				
48					75				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

NOTICE

All drawings located at the end of the document.

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

CORRIDORS

SURVEY PACKAGE TRACKING FORM

[illegible]

Page SUPERCEDED 2/25/00 Jf Chg #4


INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002			Building 707		Type 3
Survey Area W			Survey Unit N/A		Area (m ²) 818
Survey Unit Description CORRIDORS M, N, P, R AND THE SOUTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY, EXTENDING TO THE SOUTH END OF BUILDING 707 INCLUDES ROOMS 178 AND 178A BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
105	82	30	3	0	115
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area. W		Survey Unit: N/A		Area (m ²) 818	
Survey Unit Description CORRIDORS M, N, P, R AND THE SOUTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY, EXTENDING TO THE SOUTH END OF BUILDING 707 INCLUDES ROOMS 178 AND 178A BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
79	50	30	3	0	89
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building 707
Survey Area: W	Survey Unit N/A
Survey Unit Description: CORRIDORS M, N, P, R AND THE SOUTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY, EXTENDING TO THE SOUTH END OF BUILDING 707 INCLUDES ROOMS 178 AND 178A BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation:	
	

Page Superseded 2/25/00 J Chg #4

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707
Survey Area: W		Survey Unit N/A
Survey Unit Description: CORRIDORS M, N, P, R AND THE SOUTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY, EXTENDING TO THE SOUTH END OF BUILDING 707 INCLUDES ROOMS 178 AND 178A BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>105 unbiased survey points uniformly distributed throughout the specified corridors (3 per floor, 2 per wall section – module walls to be treated separately For rooms 178 and 178A take 3 per floor and 2 per wall</p> <p>10 biased survey points at the following locations</p> <ul style="list-style-type: none"> - 1 point near 2 of the 4 doors on each module adjacent to the corridors <p>CEILINGS/WALLS > 2 meters</p> <p>72 biased surveys with focus on following areas</p> <ul style="list-style-type: none"> - Ceilings/walls adjacent to storage vaults - Stained or discolored areas - Areas around pipe or other penetrations <p>EQUIPMENT</p> <p>30 biased survey points on equipment with one or more samples from</p> <ul style="list-style-type: none"> - Surveys points at exhaust ducts in corridors - Survey points on top of overhead piping (where locations are accessible through reach tools) - Survey points where pipes/equipment penetrate dropped ceilings (where present) - Other equipment as determined by RCT 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707
Survey Area. W		Survey Unit N/A
Survey Unit Description. CORRIDORS M, N, P, R AND THE SOUTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY, EXTENDING TO THE SOUTH END OF BUILDING 707 INCLUDES ROOMS 178 AND 178A BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	FLOORS/WALLS < 2 meters 79 <u>uniformly distributed</u> survey points throughout the specified corridors (3 per floor, 2 per wall section – module walls to be treated separately For room 178 take 3 wall points, 3 floor points For room 178A take 1 floor and 1 wall point 10 <u>biased</u> survey points at the following locations <ul style="list-style-type: none"> - 1 point near 2 of the 4 doors on each module adjacent to the corridors CEILINGS/WALLS > 2 meters 40 <u>biased</u> surveys with focus on following areas <ul style="list-style-type: none"> - Ceilings/walls adjacent to storage vaults - Stained or discolored areas - Areas around pipe or other penetrations EQUIPMENT 30 <u>biased</u> survey points on equipment with one or more samples from <ul style="list-style-type: none"> - Surveys points at exhaust ducts in corridors - Survey points on top of overhead piping (where locations are accessible through reach tools) - Survey points where pipes/equipment penetrate dropped ceilings (where present) - Other equipment as determined by RCT 	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707
Survey Area: W		Survey Unit N/A
Survey Unit Description: CORRIDORS M, N, P, R AND THE SOUTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY, EXTENDING TO THE SOUTH END OF BUILDING 707 INCLUDES ROOMS 178 AND 178A BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 115 1 m ² surface scans shall be taken at each location identified for surface activity measurements Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 3 biased (paint) media samples taken as follows - 1 sample each near an entrance (determined by RCT) to two modules (2 samples total) - 1 sample near an eyewash station or other floor drain	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707
Survey Area: W		Survey Unit N/A
Survey Unit Description CORRIDORS M, N, P, R AND THE SOUTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY, EXTENDING TO THE SOUTH END OF BUILDING 707 INCLUDES ROOMS 178 AND 178A BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 89 1 m ² surface scans shall be taken at each location identified for surface activity measurements Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 3 biased (paint) media samples taken as follows - 1 sample each near an entrance (determined by RCT) to two modules (2 samples total) - 1 sample near an eyewash station or other floor drain	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Pg superseded 01/18/00 JG che #2

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (conf)

Package ID: 99-0002	Building 707
Survey Area: W	Survey Unit N/A
Survey Unit Description. CORRIDORS M, N, P, R AND THE SOUTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY, EXTENDING TO THE SOUTH END OF BUILDING 707 INCLUDES ROOMS 178 AND 178A BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For each media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: W	Survey Unit N/A
Survey Unit Description. CORRIDORS M, N, P, R AND THE SOUTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY, EXTENDING TO THE SOUTH END OF BUILDING 707 INCLUDES ROOMS 178 AND 178A BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

Pg superseded 01/18/00 by Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area W	Survey Unit N/A
Survey Unit Description: : CORRIDORS M, N, P, R AND THE SOUTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY, EXTENDING TO THE SOUTH END OF BUILDING 707 INCLUDES ROOMS 178 AND 178A BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area. W	Survey Unit N/A
Survey Unit Description: CORRIDORS M, N, P, R AND THE SOUTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY, EXTENDING TO THE SOUTH END OF BUILDING 707 INCLUDES ROOMS 178 AND 178A BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

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SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 707
Survey Area: W		Survey Unit N/A
Survey Type: Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/>		
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	1	db
Total Activity Surveys	1	db
Exposure Rate Surveys	NA	NA
Removable Surveys	1	db
Media Samples	Q&A	EDM
Volumetric Samples	NA	NA
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	1	db
Total Activity Surveys	1	db
Exposure Rate Surveys	NA	NA
Removable Surveys	1	db
Media Samples	Q&A	EDM
Volumetric Samples	NA	NA
Comments		

Page Superseded ERM 4/12/00 Change # 5

ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____		
Model _____	Model _____	Model _____	Building _____		
Serial # _____	Serial # _____	Serial # _____	Location* _____		
Cal Due _____	Cal Due _____	Cal Due _____	Purpose* _____		
Bkg _____	Bkg. _____	Bkg. _____	RWP # _____		
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____		
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____		
Mfg _____	Mfg. _____	Mfg _____	Print name _____ Signature _____ Emp # _____		
Model _____	Model _____	Model _____	RCT _____ / _____ / _____		
Serial # _____	Serial # _____	Serial # _____	Print name _____ Signature _____ Emp # _____		
Cal Due _____	Cal Due _____	Cal Due _____			
Bkg _____	Bkg. _____	Bkg _____			
Efficiency _____	Efficiency _____	Efficiency _____			
MDA _____	MDA _____	MDA _____			

PRL #: _____

Comments: _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1. _____	_____	_____	_____	26 _____	_____	_____	_____
2. _____	_____	_____	_____	27 _____	_____	_____	_____
3. _____	_____	_____	_____	28 _____	_____	_____	_____
4. _____	_____	_____	_____	29 _____	_____	_____	_____
5. _____	_____	_____	_____	30 _____	_____	_____	_____
6. _____	_____	_____	_____	31 _____	_____	_____	_____
7. _____	_____	_____	_____	32 _____	_____	_____	_____
8. _____	_____	_____	_____	33 _____	_____	_____	_____
9. _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

Date Reviewed: _____

RS Supervision: _____

Print Name _____

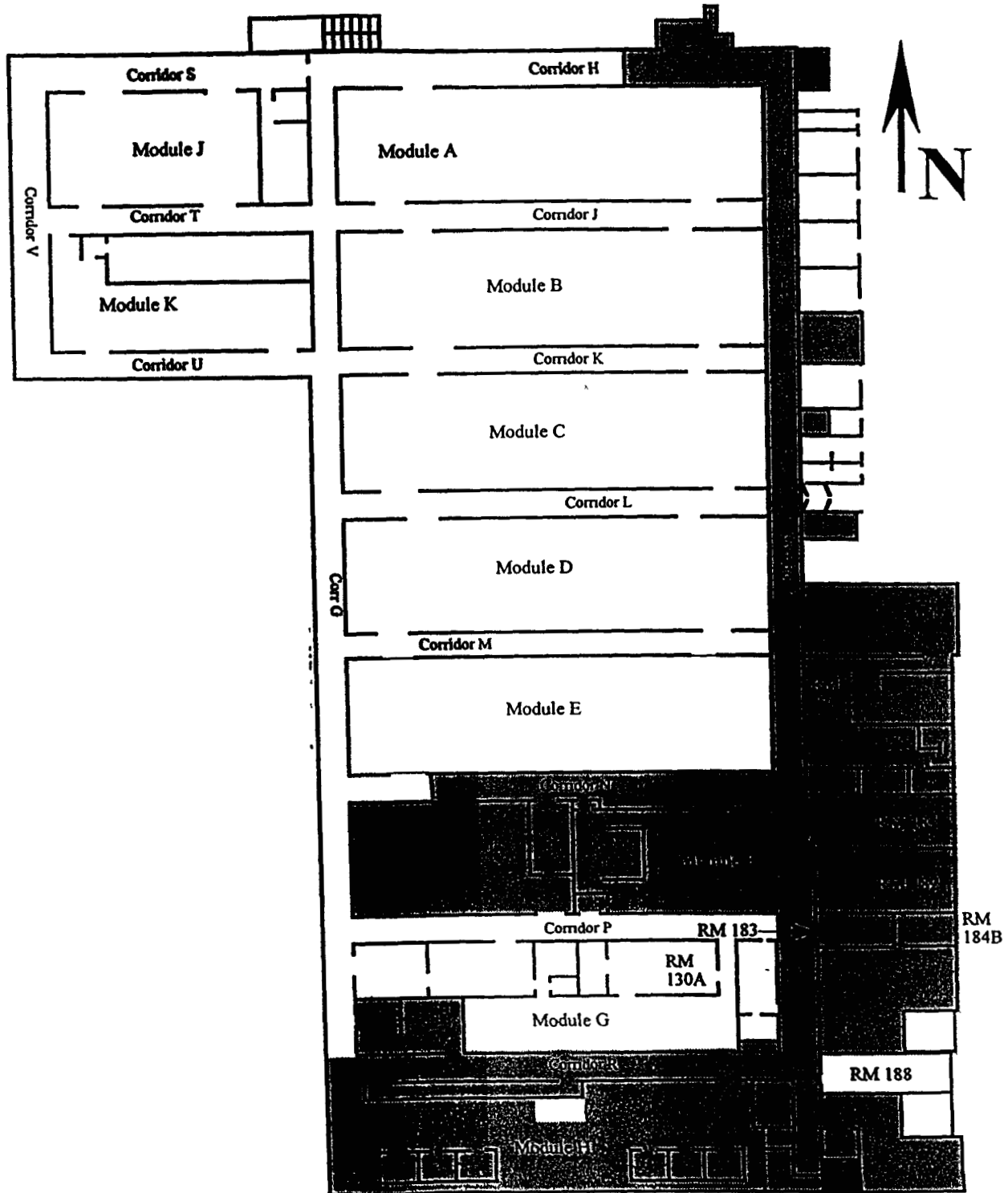
Signature _____

Emp # _____

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326/466

RADIOLOGICAL SAFETY **Drawing Showing Survey Points**



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3265</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>3.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>12.9 dpm</u>	MDA <u>11.5 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u></u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>N/A</u>
Bkg <u>5.2 cpm</u>	Bkg <u>5.1 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>110.4 dpm</u>	MDA <u>109.4 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location South Corridors Survey Area W
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 3-14-00 Time 1630

RCT N/A
 Print name N/A Signature / Emp #

Comments Floor / Walls < 2 meters Unbiased survey points1 m² scans, 1 minute pats and swipes See map for locations3 background alpha counts electra < 8cpm (1,1,5)CA only**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1.	Wall	0	20	30	16	Wall	3	-24	36
2	Floor	6	-40	36	17	Floor	0	42	12
3	Wall	0	0	36	18	Floor	0	20	8
4	Wall	0	4	54	19	Wall	0	-8	6
5	Floor	0	-28	18	20	Wall	0	-24	12
6.	Wall	0	0	42	21	Wall	3	-20	18
7.	Wall	3	52	36	22	Floor	0	56	48
8.	Floor	3	28	12	23	Floor	0	16	24
9.	Wall	0	-8	0	24	Wall	6	16	18
10.	Wall	0	-36	6	25	Wall	0	40	30
11.	Floor	0	0	24	26	Floor	0	-16	24
12	Wall	0	-32	12	27	Wall	0	8	30
13	Floor	3	12	48	28	Wall	0	40	36
14.	Wall	3	20	24	29	Floor	0	-8	0
15.	Wall	0	-12	0	30	Wall	0	24	48

Date Reviewed: 3-16-00 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

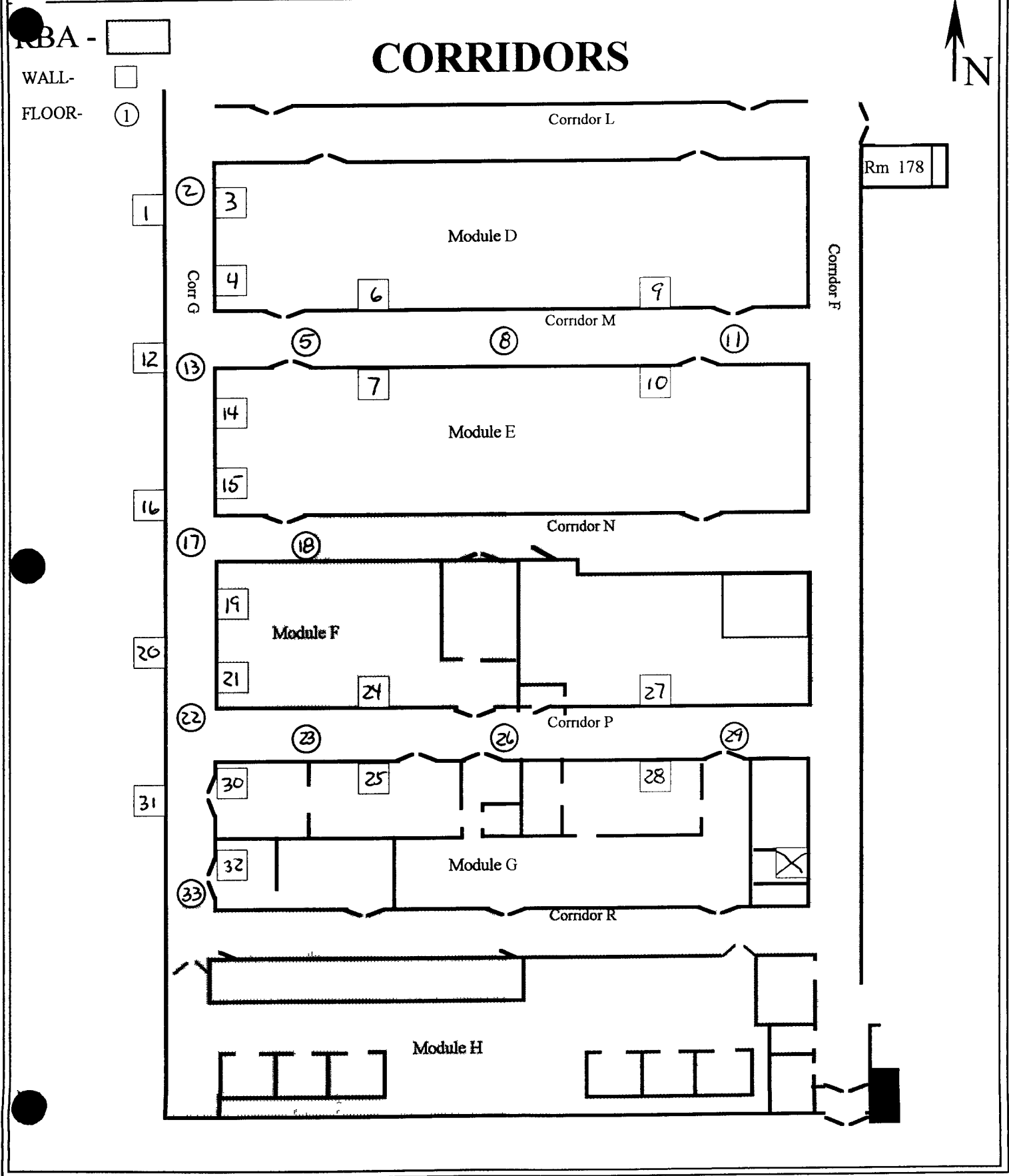
Drawing Showing Survey Points

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	Wall	0	-4	30	61				
32	Wall	0	12	18	62				
33	Floor	0	0	36	63				
34	End of Survey				64				
35					65				
36					66				
37					67				
38					68				
39.					69				
40.					70				
41.					71				
42.					72				
43.					73				
44					74				
45.					75				
46.					76	N A			
47	N A				77				
48					75				
49.					79				
50					80				
51					81				
52.					82				
53.					83				
54					84				
55					85				
56.					86				
57.					87				
58.					88				
59					89				
60					90				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1518</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.86</u>
MDA <u>12.9 dpm</u>	MDA <u>82.0 dpm</u>	MDA <u>94.9 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>923</u>	Serial # <u></u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u></u>
Bkg <u>5.2 cpm</u>	Bkg <u>5.1 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>110.4 dpm</u>	MDA <u>109.4 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location CORRIDORS Survey Area W
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 3/14/00 Time 12:17

RCT _____
 Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Unbiased survey points

1 m² scans, 1 minute pats and swipes See map for locations RBA ONLY (SEE MAP)
3 bkgd counts alpha electa ~8cpm (1,0,6)

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1.	<u>FLOOR</u>	<u>3</u>	<u>-12</u>	<u>684</u>	16	<u>F</u>	<u>0</u>	<u>20</u>	<u>18</u>
2.	<u>"</u>	<u>3</u>	<u>-20</u>	<u>294</u>	17	<u>"</u>	<u>3</u>	<u>44</u>	<u>24</u>
3	<u>"</u>	<u>0</u>	<u>4</u>	<u>150</u>	18	<u>W</u>	<u>0</u>	<u>-12</u>	<u>30</u>
4	<u>"</u>	<u>3</u>	<u>8</u>	<u>2040</u>	19	<u>W</u>	<u>3</u>	<u>20</u>	<u>12</u>
5.	<u>W</u>	<u>0</u>	<u>-12</u>	<u>540</u>	20	<u>F</u>	<u>3</u>	<u>-4</u>	<u>48</u>
6	<u>"</u>	<u>6</u>	<u>20</u>	<u>120</u>	21	<u>W</u>	<u>0</u>	<u>-28</u>	<u>54</u>
7	<u>"</u>	<u>0</u>	<u>-44</u>	<u>108</u>	22	<u>F</u>	<u>0</u>	<u>20</u>	<u>30</u>
8	<u>"</u>	<u>0</u>	<u>100</u>	<u>96</u>	23	<u>W</u>	<u>0</u>	<u>0</u>	<u>12</u>
9	<u>F</u>	<u>0</u>	<u>60</u>	<u>6</u>	24	<u>F</u>	<u>0</u>	<u>-32</u>	<u>12</u>
10	<u>W</u>	<u>3</u>	<u>32</u>	<u>12</u>	25	<u>W</u>	<u>3</u>	<u>16</u>	<u>36</u>
11.	<u>W</u>	<u>0</u>	<u>-28</u>	<u>12</u>	26	<u>F</u>	<u>0</u>	<u>-44</u>	<u>12</u>
12	<u>W</u>	<u>0</u>	<u>8</u>	<u>12</u>	27	<u>"</u>	<u>0</u>	<u>0</u>	<u>18</u>
13	<u>F</u>	<u>3</u>	<u>32</u>	<u>12</u>	28	<u>"</u>	<u>0</u>	<u>-12</u>	<u>36</u>
14.	<u>W</u>	<u>0</u>	<u>44</u>	<u>6</u>	29	<u>"</u>	<u>3</u>	<u>-8</u>	<u>12</u>
15.	<u>F</u>	<u>0</u>	<u>-28</u>	<u>24</u>	30	<u>W</u>	<u>3</u>	<u>-32</u>	<u>18</u>

Date Reviewed: 3-15-00 RS Supervision: _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Point #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	W	0	-40	24	61				
32	W	6	-24	18	62				
33	W	0	-16	6	63				
34	"	0	-4	24	64				
35	"	0	64	6	65				
36	"	6	8	6	66				
37	"	3	44	6	67				
38	"	0	-16	18	68				
39	"	0	12	54	69				
40	"	0	0	48	70				
41	"	0	-40	48	71				
42	"	3	28	66	72				
3	"	0	-24	48	73				
4	"	0	-16	12	74				
45	"	0	8	24	75				
46	"	3	12	60	76				
47	End of Survey				77				
48					75				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

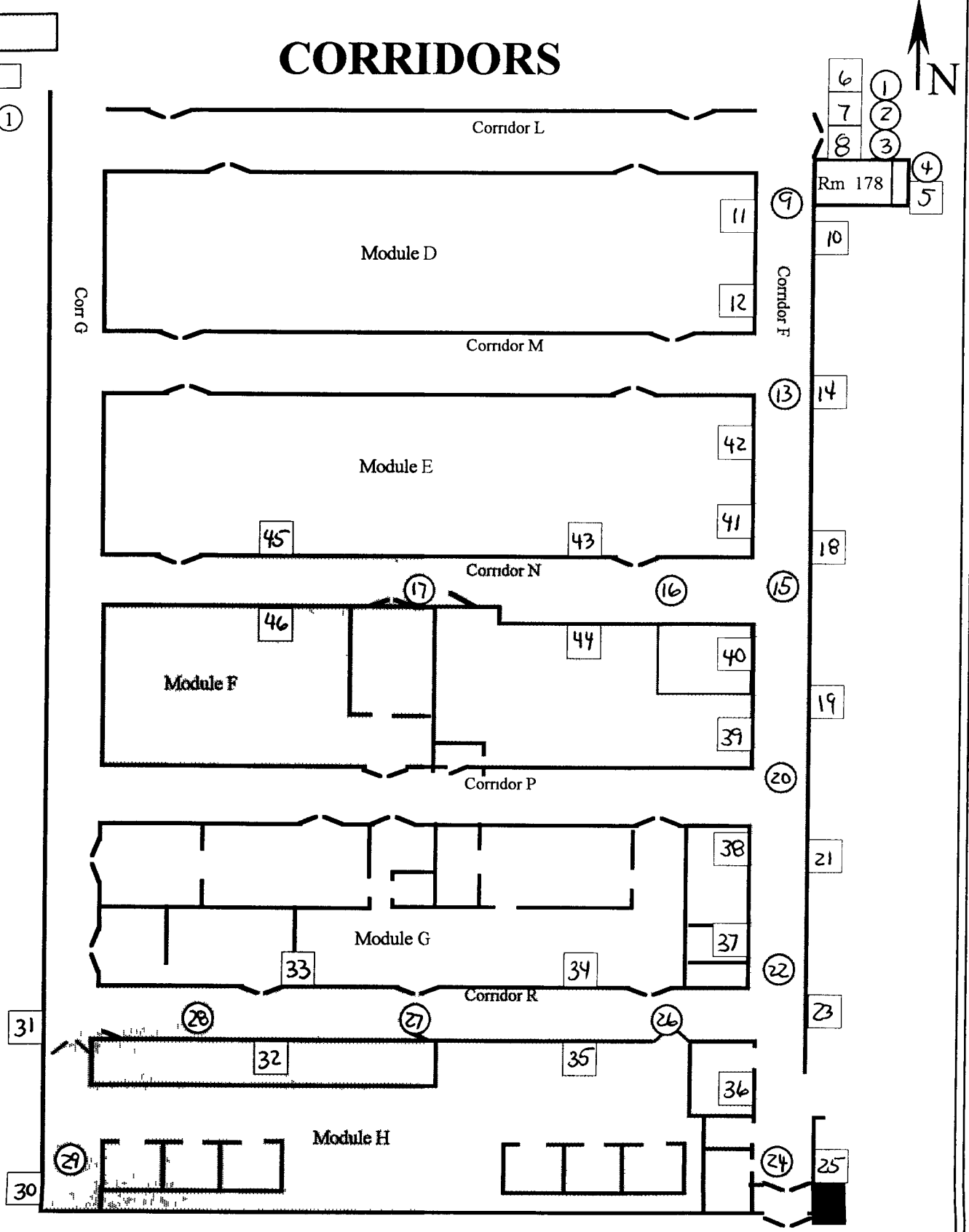
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

RBA - ☐
WALL- ☐
FLOOR- ①

CORRIDORS



547

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3265</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>3.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>12.9 dpm</u>	MDA <u>11.5 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u></u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>N/A</u>
Bkg <u>52 cpm</u>	Bkg <u>51 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>110.4 dpm</u>	MDA <u>109.4 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707
 Location South Corridors Survey Area W
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 3-14-00 Time 1630

RCT N/A
 Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Biased survey points1 m² scans, 1 minute pats and swipes See map for locations3 bkgd counts alpha electra ~8cpm (1,2,5)**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Floor	0	52	12	16				
2	Floor	3	4	48	17				
3	Floor	0	40	24	18				
4	Floor	0	16	30	19				
5	Floor	0	8	12	20				
6	Floor	0	44	42	21				
7	Floor	3	4	30	22				
8	Floor	3	20	48	23				
9	Floor	0	12	6	24				
10	Floor	3	36	36	25				
11	END of Survey				26				
12					27				
13					28				
14					29				
15					30				

Date Reviewed: 3-16-00 RS Supervision

Print Name

Signature

Emp #

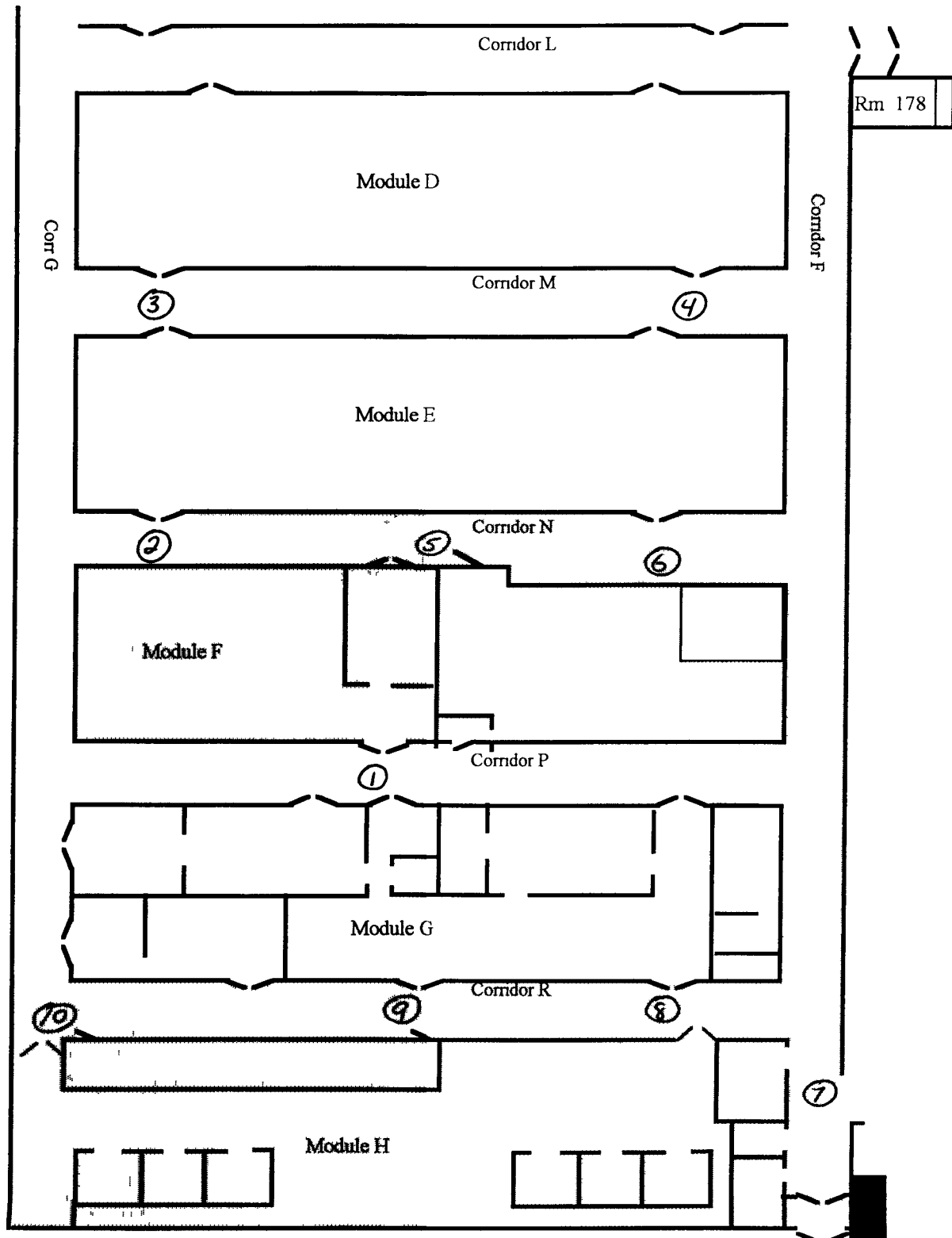
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

RBA - ☐

CORRIDORS



9/11/00 79 - Total Survey Points

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3265</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>3.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>12.9 dpm</u>	MDA <u>11.5 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>N/A</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>N/A</u>
Bkg <u>52 cpm</u>	Bkg <u>51 cpm</u>	Bkg <u>N/A</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>N/A</u>
MDA <u>110.4 dpm</u>	MDA <u>109.4 dpm</u>	MDA <u>N/A</u>

Survey Type ContaminationBuilding 707Location South CorridorsSurvey Area WPurpose Reconnaissance Level CharacterizationRWP # 00-707-1204Date 3/4/00Time 1630

RCT

Print name N/A

Signature

/ Emp #

Comments Equipment Biased survey points1 minute pats and swipes See map for locations3 bkgd counts alpha electra <8cpm (1,4,5)

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1.	Vent	3	76	36	16	Vent	0	16	60
2.	Vent	0	24	18	17	Drop	0	48	36
3.	Vent	0	32	30	18	CHAIN Vayer	6	0	12
4	Vent	9	8	60	19	Box	3	12	6
5.	Vent	90	76	54	20	Box	0	40	12
6.	Vent	12	24	30	21	Box	0	0	54
7.	Temp indicator	0	48	36	22	Box	0	24	12
8.	Door	0	24	60	23	Cage	0	4	42
9.	Door	0	64	30	24	Vent	0	16	18
10	Vent	3	104	24	25	Cage	0	24	30
11.	Vent	0	60	60	26	Box	0	8	0
12.	Vent	6	20	30	27	Box	0	32	54
13.	Vent	6	24	36	28	Box	0	8	36
14	Vent	3	16	54	29	Box	0	12	18
15.	Vent	0	24	102	30	Box	0	24	18

Date Reviewed: 3-16-00 RS Supervision: 

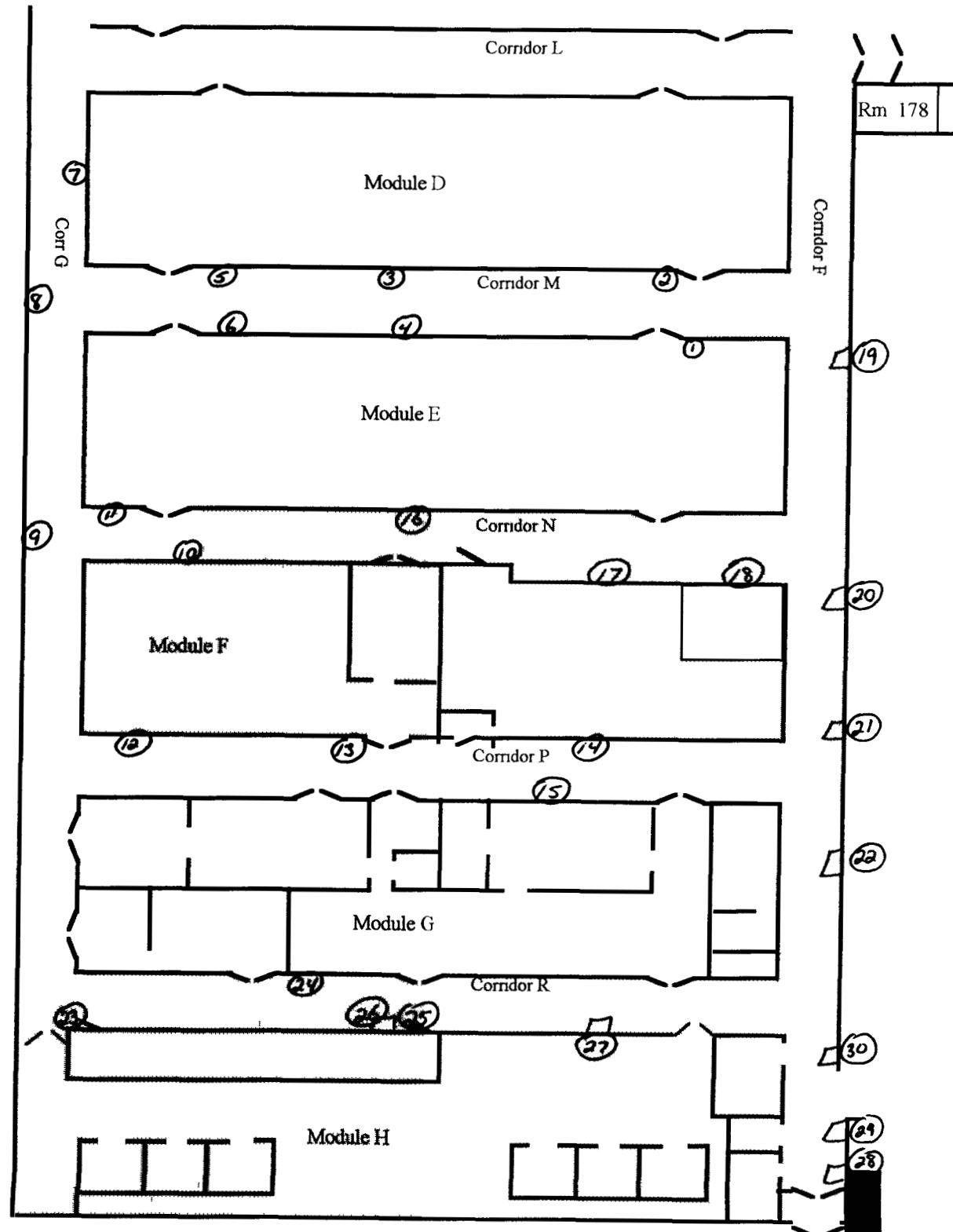
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

RBA - ☐

CORRIDORS



9:14:00

79₃₅ Total Survey Points

551

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>1233</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.4 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>1 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>11.8 dpm</u>	MDA <u>11.5 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>1233</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>N/A</u>
Bkg <u>0.4 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>1 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>17%</u>
MDA <u>11.3 dpm</u>	MDA <u>11.0 dpm</u>	MDA <u>94 dpm</u>

Survey Type Contamination

Building 707
 Location South Corridors Survey Area W
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 3-15-00 Time 1630

Comments Ceiling / Walls > 2 meters Biased survey points

1 minute pats and swipes See map for locations

3 bkgd Counts alpha electra 18cpm (1,1,4)

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1.	<u>Ceiling Tile</u>	0	28	0	16	<u>wall</u>	0	20	6
2.	<u>Ceiling Vent</u>	0	12	6	17	<u>wall</u>	3	12	12
3.	<u>Ceiling Vent</u>	3	56	12	18	<u>wall</u>	0	124	6
4.	<u>Ceiling Tile</u>	0	0	6	19	<u>wall</u>	0	0	6
5.	<u>Ceiling Vent</u>	3	4	18	20	<u>wall on stain</u>	0	12	18
6.	<u>Ceiling Tile</u>	0	8	24	21	<u>wall</u>	0	20	12
7.	<u>Ceiling Vent</u>	0	52	0	22	<u>wall</u>	0	-8	0
8.	<u>Ceiling Vent</u>	3	-28	0	23	<u>wall</u>	9	-32	6
9.	<u>Ceiling Vent</u>	3	4	42	24	<u>wall</u>	0	-20	6
10.	<u>wall</u>	0	4	18	25	<u>wall</u>	6	32	12
11.	<u>wall</u>	3	-12	0	26	<u>wall</u>	0	-4	6
12.	<u>wall</u>	3	48	12	27	<u>wall</u>	0	-16	0
13.	<u>wall</u>	3	-8	6	28	<u>wall</u>	0	12	36
14.	<u>wall</u>	0	-16	6	29	<u>wall</u>	0	-36	0
15.	<u>wall</u>	0	36	12	30	<u>wall</u>	0	12	-6

Date Reviewed: 3-16-00 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

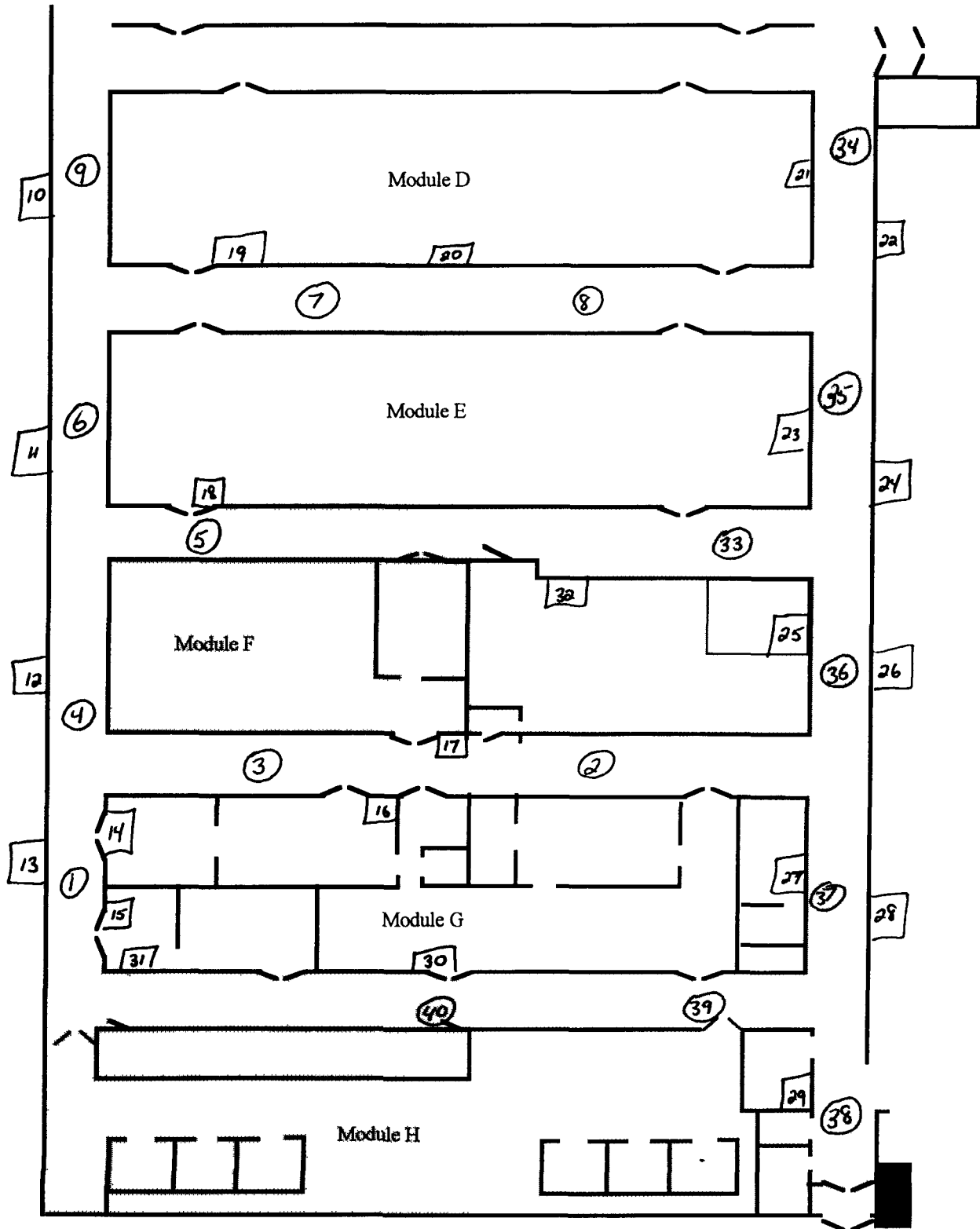
RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	Wall	3	20	0	61				
32	Wall C-N	3	20	18	62				
33	Ceiling	0	24	0	63				
34	Ceiling Vent	0	12	24	64				
35	Ceiling Vent	0	4	0	65				
36	Ceiling Vent	0	40	18	66				
37	Ceiling Vent	0	4	6	67				
38	Ceiling Vent	0	8	12	68				
39	Ceiling Vent	0	8	24	69				
40	Ceiling Tile	0	24	12	70				
41	End of Survey				71				
42					72				
43					73				
44					74				
45					75				
46					76	N/A			
47					77				
48					78				
49					79				
50	N/A				80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

RBA - ☐**CORRIDORS**

SURVEY PACKAGE TRACKING FORM

[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID. 99-0002			Building. 707		Type 3	
Survey Area X			Survey Unit N/A		Area (m ²) 672	
Survey Unit Description Modules J and K, excluding rooms 146, 141, and 142 due to posting as HCA/ARA Building 707 radiological areas are posted as fixed contamination areas						
Survey Type				Classification		
RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>				Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
50	50	45	8	0	70	
Building		Type		Survey Area		
Survey Unit			Area (m ²)			
Survey Unit Description						
Survey Type				Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>				Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building		Type		Survey Area		
Survey Unit			Area (m ²)			
Survey Unit Description						
Survey Type				Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>				Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building		Type		Survey Area		
Survey Unit			Area (m ²)			
Survey Unit Description						
Survey Type				Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>				Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building 707
Survey Area: X	Survey Unit: N/A
Survey Unit Description: MODULES J AND K, EXCLUDING ROOMS 146, 141, AND 142 DUE TO POSTING AS HCA/ARA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation: <div style="background-color: black; width: 100%; height: 250px; margin-top: 10px;"></div>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707
Survey Area: X		Survey Unit N/A
Survey Unit Description: Modules J and K, excluding rooms 146, 141, and 142 due to posting as HCA/ARA Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>50 <u>unbiased</u> survey points uniformly distributed throughout rooms (25 per module)</p> <p>20 <u>biased</u> survey points at the following locations</p> <ul style="list-style-type: none"> - 10 points around floors adjacent to contained contamination areas/tents (where accessible) - 1 point near 2 different criticality drain locations in module J and K (4 points total) - 2 points near airlock to X-Y Retriever in K module - Other points as determined by RCT <p>CEILINGS/WALLS > 2 meters</p> <p>30 <u>biased</u> surveys (divided evenly between wall and ceiling when possible) with focus on following areas</p> <ul style="list-style-type: none"> - Walls behind process lines - Ceilings above GB's - Ceilings/walls adjacent to c-cells/tents - Stained or discolored areas - Walls/ceilings near GB's mounted high on walls - Areas around pipe or other penetrations <p>EQUIPMENT</p> <p>45 <u>biased</u> survey points on equipment with one or more samples from</p> <ul style="list-style-type: none"> - Each GB "section" extending from the main (center) GB lines - Areas around stokes pumps and areas of contained localized contamination - Gloveboxes which have visible leaks or contained spills beneath them - 2 surveys points at each of 5 room exhaust ducts per module - Bag-in/bag out ports to GB lines - 5 survey points on top of overhead piping (where locations are accessible through reach tools) 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707
Survey Area: X		Survey Unit N/A
Survey Unit Description: Modules J and K, excluding rooms 146, 141, and 142 due to posting as HCA/ARA Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 70 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 8 biased (paint) media samples taken as follows: <ul style="list-style-type: none"> - 1 sample near one of the entrances to each module - 1 sample around a posted HCA in each module - 1 sample beneath GB K55 (in K Module) - 1 sample beneath GB 35 (in J Module) - 1 sample near a criticality drain in each module 	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Pg superseded 01/18/00

Chg #2

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: X	Survey Unit N/A
Survey Unit Description: Modules J and K, excluding rooms 146, 141, and 142 due to posting as HCA/ARA Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5: For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area X	Survey Unit N/A
Survey Unit Description: Modules J and K, excluding rooms 146, 141, and 142 due to posting as HCA/ARA Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

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Pg superseded 01/18/00 JF Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: X	Survey Unit N/A
Survey Unit Description: : MODULES J AND K, EXCLUDING ROOMS 146, 141, AND 142 DUE TO POSTING AS HCA/ARA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i e , non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e g , elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e g , indicate which direction is North) • Other appropriate information (e g , "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: X	Survey Unit N/A
Survey Unit Description : MODULES J AND K, EXCLUDING ROOMS 146, 141, AND 142 DUE TO POSTING AS HCA/ARA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID. 99-0002	Building 707	
Survey Area: X	Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/>		
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	I	dj
Total Activity Surveys	I	KDM
Exposure Rate Surveys	NA	NA
Removable Surveys	I	KDM
Media Samples	[Signature]	KDM
Volumetric Samples	NA	NA
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	I	dj
Total Activity Surveys	I	KDM
Exposure Rate Surveys	NA	NA
Removable Surveys	I	KDM
Media Samples	[Signature]	KDM
Volumetric Samples	NA	NA
Comments 		

ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____
Model _____	Model _____	Model _____	Building _____
Serial # _____	Serial # _____	Serial # _____	Location _____
Cal Due _____	Cal Due _____	Cal Due _____	Purpose _____
Bkg. _____	Bkg. _____	Bkg. _____	RWP # _____
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____
			Print name _____ Signature _____ Emp # _____
Mfg. _____	Mfg. _____	Mfg. _____	RCT _____ / _____ / _____
Model _____	Model _____	Model _____	Print name _____ Signature _____ Emp # _____
Serial # _____	Serial # _____	Serial # _____	
Cal Due _____	Cal Due _____	Cal Due _____	
Bkg. _____	Bkg. _____	Bkg. _____	
Efficiency _____	Efficiency _____	Efficiency _____	
MDA _____	MDA _____	MDA _____	

PRL # : _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1 _____	_____	_____	_____	26 _____	_____	_____	_____
2 _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33 _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

Date Reviewed: _____

RS Supervision: _____

Print Name _____

Signature _____

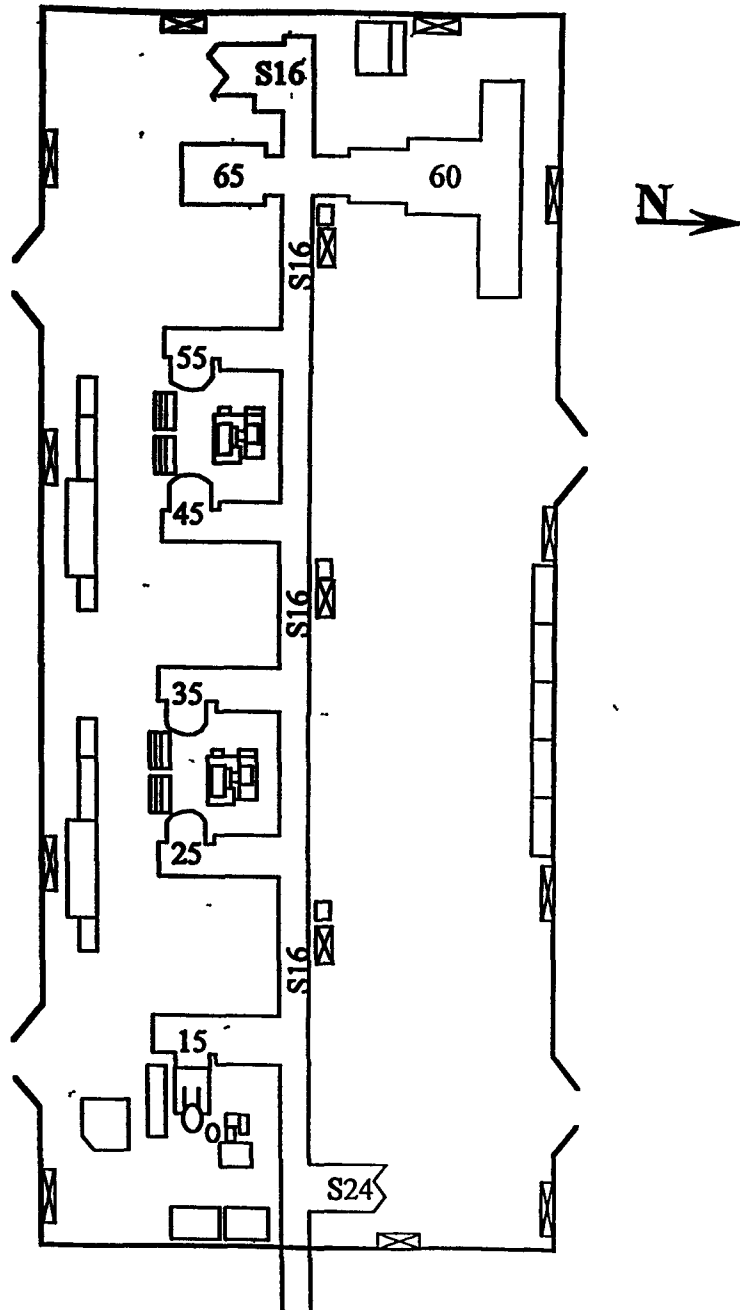
Emp # _____

566

335/466

RADIOLOGICAL SAFETY
Drawing Showing Survey Points

MODULE J



Pg SUPERCEDED. *do* 4/27/00 (CHANGE 4)

RS FORMS 07.02-01

Page 10 of 10

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____
Model _____	Model _____	Model _____	Building _____
Serial # _____	Serial # _____	Serial # _____	Location _____
Cal Due _____	Cal Due _____	Cal Due _____	Purpose _____
Bkg. _____	Bkg. _____	Bkg. _____	RWP # _____
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____
Mfg. _____	Mfg. _____	Mfg. _____	Print name _____ Signature _____ Emp # _____
Model _____	Model _____	Model _____	RCT _____ / _____ / _____
Serial # _____	Serial # _____	Serial # _____	Print name _____ Signature _____ Emp # _____
Cal Due _____	Cal Due _____	Cal Due _____	
Bkg _____	Bkg _____	Bkg _____	
Efficiency _____	Efficiency _____	Efficiency _____	
MDA _____	MDA _____	MDA _____	

PRL # : _____

Comments. _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1 _____	_____	_____	_____	26 _____	_____	_____	_____
2 _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33 _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

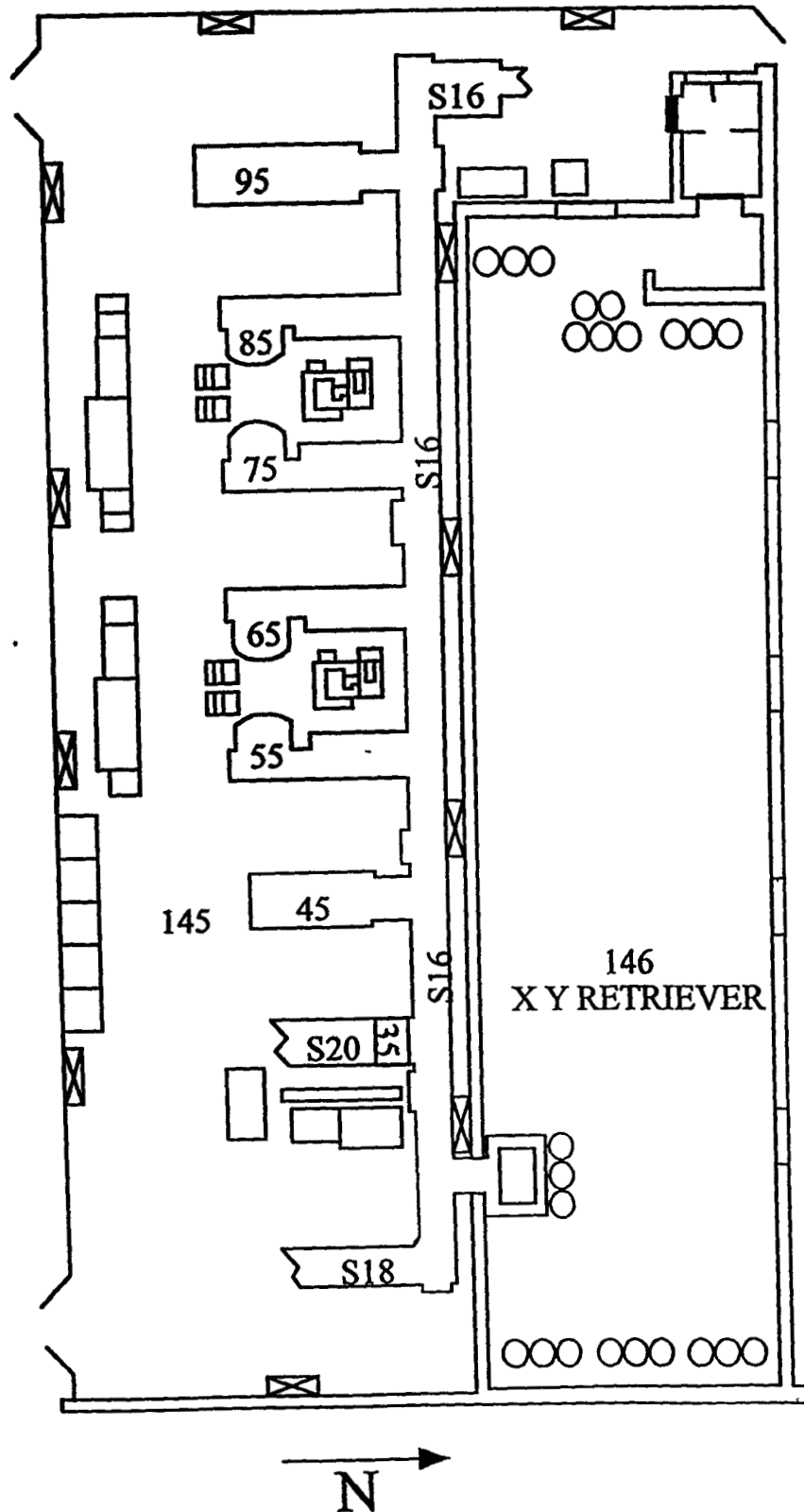
Date Reviewed: _____ RS Supervision: _____ / _____ / _____
Print Name _____ Signature _____ Emp # _____

336/466

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE K



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>849</u>	Serial # <u>837</u>	Serial # <u>3120</u>
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>4/26/00</u>
Bkg <u>0.4 cpm</u>	Bkg <u>0.6 cpm</u>	Bkg <u>6.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.09%</u>
MDA <u>14.8 dpm</u>	MDA <u>16.3 dpm</u>	MDA <u>94 dpm</u>

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>N/A</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u></u>
Bkg <u>53 cpm</u>	Bkg <u>51 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>111.3 dpm</u>	MDA <u>109.4 dpm</u>	MDA <u></u>

Survey Type. Contamination

Building 707
 Location MODULE J-K Survey Area X
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 3/13/00 Time DAYS

RCT

Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Unbiased survey points1 m² scans, 1 minute pats and swipes See map for locations* Bkg. 5min 14.0 cpm 3min PAT**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	FLOOR	0	-36	126.0	16	FLOOR	3	4	36.0
2	"	3	0	252.0	17	"	6	48	54.0
3	"	3	24	1878.0	18	"	144	20	60.0
4	"	3	16	276.0	19	"	54	-16	2240.0
5	"	0	-36	480.0	20	"	0	-12	78.0
6	"	0	-8	90.0	21	"	3	8	30.0
7	"	3	28	30.0	22	"	3	-24	36.0
8	"	0	24	72.0	23	"	0	32	18.0
9	"	3	8	300.0	24	"	0	20	144.0
10	"	3	40	144.0	25	"	3	-28	(6.0)
11	"	1088	-4	2454.0	26	"	0	4	60.0
12	"	3	12	54.0	27	"	3	8	78.0
13	"	0	-36	308.5	28	FLOOR *	0	16	206.0
14	"	3	-12	244.0	29	FLOOR	3	48	12.0
15	"	3	36	60.0	30	"	3	-18	54.0

Date Reviewed: 4-3-00 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

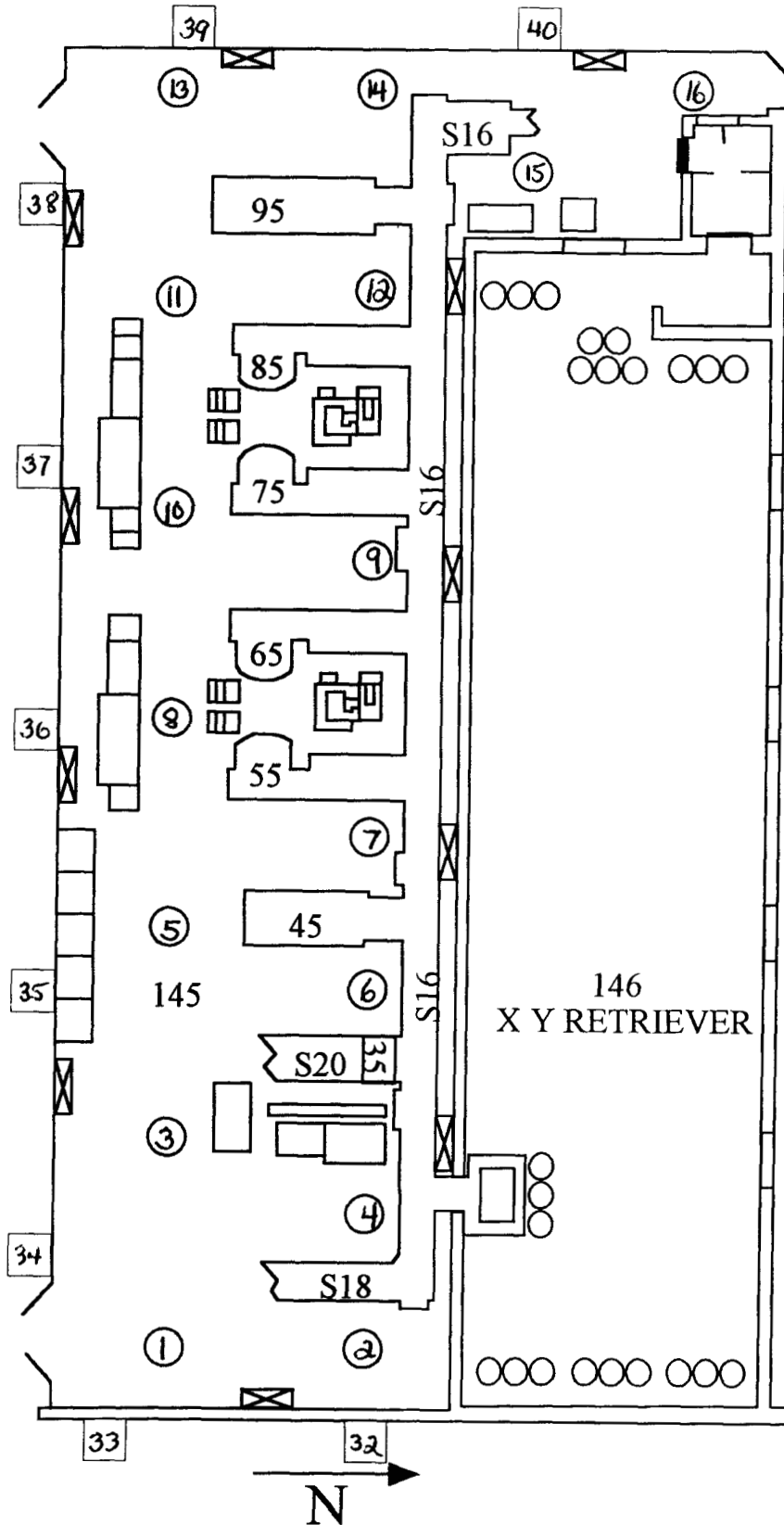
RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Point #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	Floor	9	12	9120.2	61				
32	WALL	3	(8)	72.0	62				
33	"	3	(20)	12.0	63				
34	"	3	(4)	12.0	64				
35	"	3	64	12.0	65				
36	"	3	(32)	12.0	66				
37	"	0	(16)	18.0	67				
38	"	0	4	6.0	68				
39	"	0	(8)	48.0	69				
40	"	0	16	24.0	70				
41	"	3	16	54.0	71				
42	"	0	28	6.0	72				
43	"	0	(36)	42.0	73				
44	"	0	52	12.0	74				
45	"	0	(8)	12.0	75				
46	"	0	0	12.0	76				
47	"	3	8	18.0	77	N/A			
48	"	0	0	12.0	78				
49	"	6	(8)	150.0	79				
50	"	0	56	12.0	80				
51	END OF SURVEY				81				
52					82				
53					83				
54					84				
55	N/A				85				
56					86				
57					87				
58					88				
59					89				
60					90				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

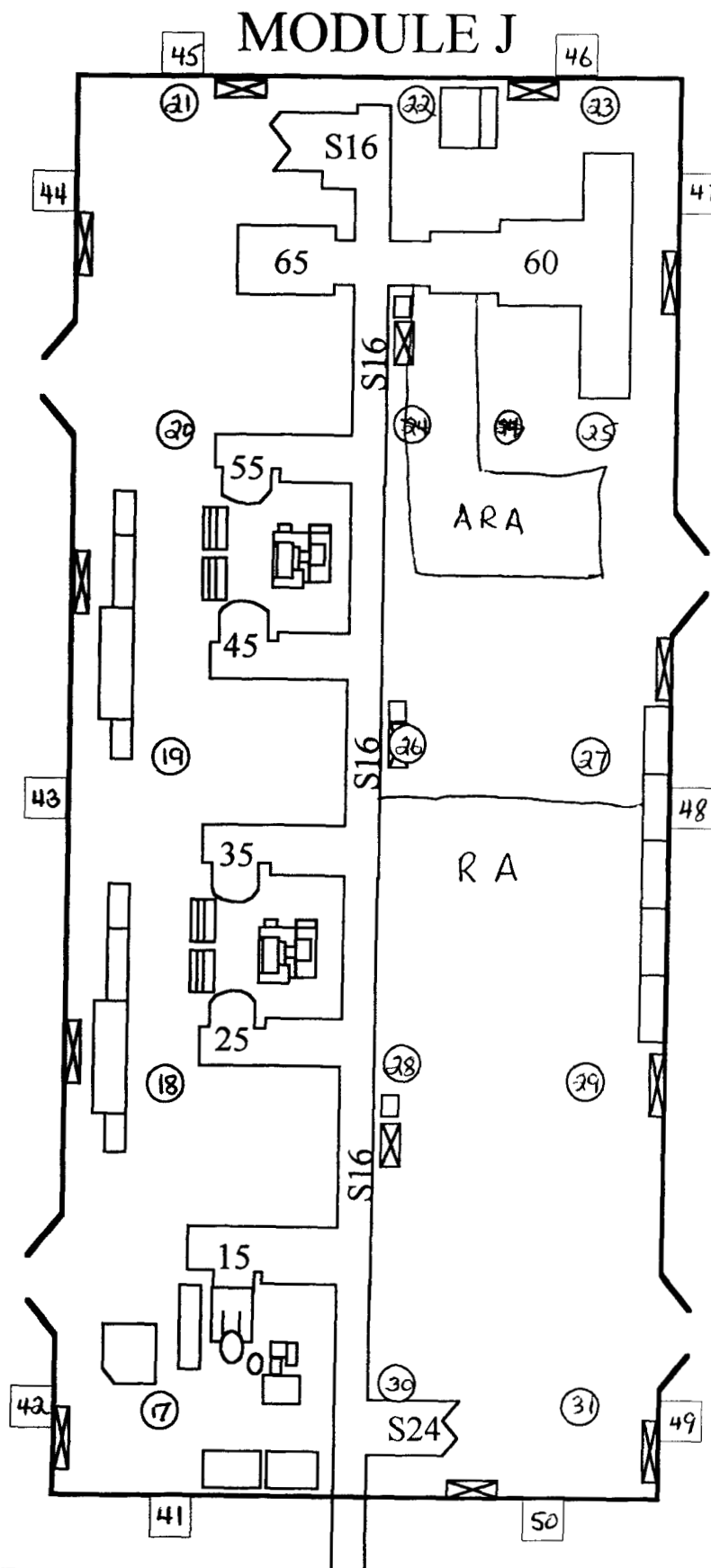
Drawing Showing Survey Points

MODULE K

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # 837	Serial # 3260
Cal Due 4-10-00	Cal Due 5-17-00	Cal Due 7-17-00
Bkg 0.6 cpm	Bkg 0.4 cpm	Bkg 3.0 cpm
Efficiency 33%	Efficiency 33%	Efficiency 19.9%
MDA 16.3 dpm	MDA 14.8 dpm	MDA 94 dpm
Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model BC-4	Model
Serial # 872	Serial # 833	Serial # N/A
Cal Due 4-12-00	Cal Due 7-14-00	Cal Due
Bkg 56 cpm	Bkg 50 cpm	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA 114.1 dpm	MDA 108.4 dpm	MDA

Survey Type. Contamination

Building 707
 Location J-K mod Survey Area X
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 3-16-00 Time 1500

RCT

Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Biased survey points

1 m² scans, 1 minute pats and swipes See map for locations

* ELECTRA 30kqd COUNTS < ELECTRA < 8 cpm (2, 3, 4)

Location 20 Decoded < 20 dpm

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	CRIT DRAIN	6	(12)	366.0	16	Floor	3	64	114K
2	Floor	0	40	78.0	17	Floor	3	(28)	2400.0
3	Floor	0	4	60.0	18	Floor	3	12	96.0
4	CRIT DRAIN	0	(44)	18.0	19	Floor	3	68	126.0
5	Floor	0	(24)	78.0	20	Floor *	4200	N/A	127.2
6	WALL	6	(24)	42.0	21	END OF SURVEY			
7	CRIT DRAIN	6	20	78.0	22				
8	Floor	3	56	132.0	23				
9	Floor	3	(100)	420.0	24				
10	Floor	33	(28)	1224.0	25				
11	CRIT DRAIN	0	(44)	30.0	26				
12	Floor	3	(8)	270.0	27				
13	Floor	9	(8)	72.0	28				
14	Floor	0	4	18.0	29				
15	Floor	0	32	180.0	30				

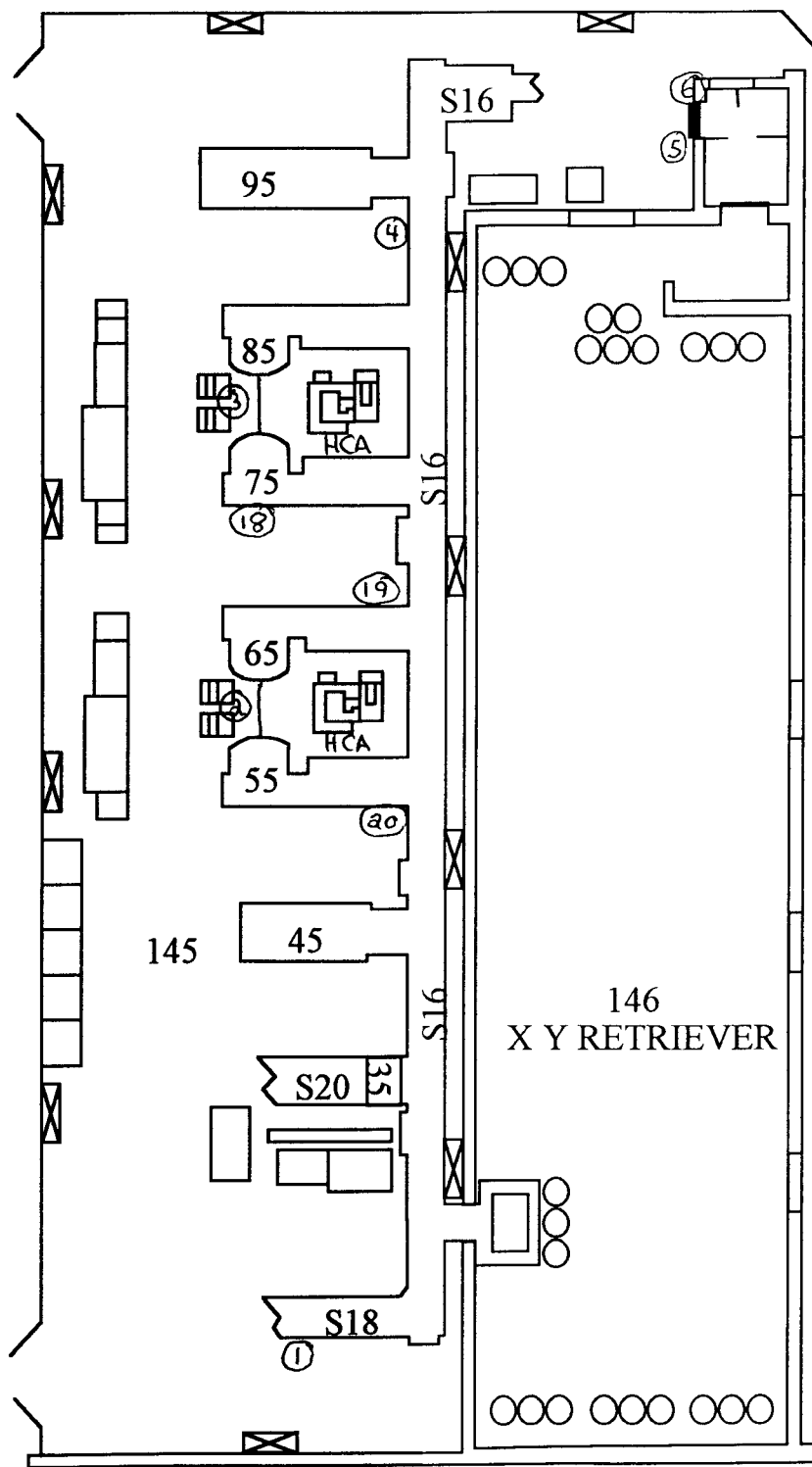
Date Reviewed: 4-3-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

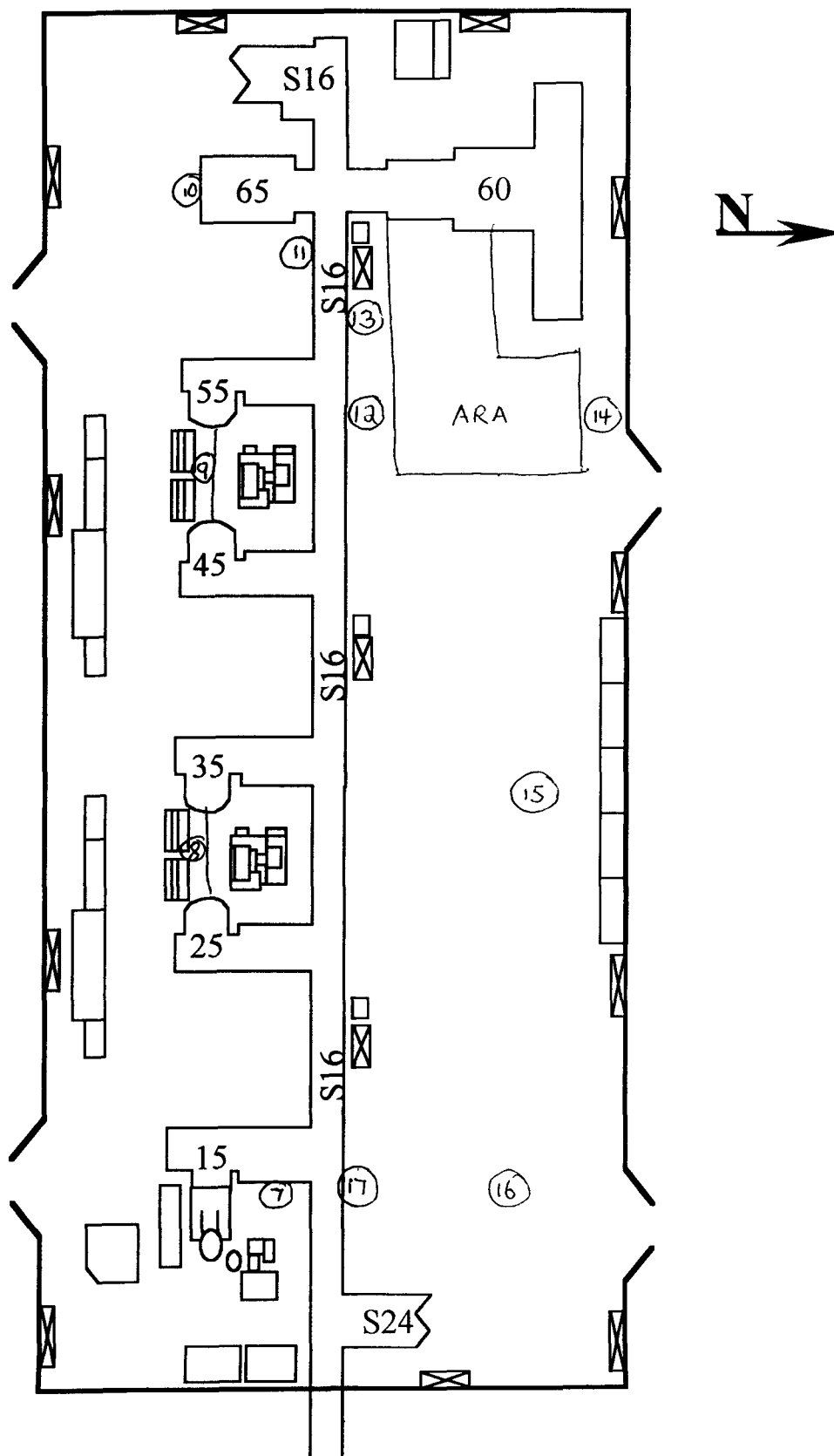
Drawing Showing Survey Points

MODULE K



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

MODULE J

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 812	Serial # 849	Serial # 1389
Cal Due 9-25-00	Cal Due 4-10-00	Cal Due 6-29-00
Bkg 0.1 cpm	Bkg 0.6 cpm	Bkg 1.0 cpm
Efficiency 33%	Efficiency 33%	Efficiency 120%
MDA 11.5 dpm	MDA 16.3 dpm	MDA 94 dpm
Mfg Eberline	Mfg Eberline	Mfg NE Tech
Model BC-4	Model BC-4	Model Electra
Serial # 872	Serial # 833	Serial # 1518
Cal Due 4-12-00	Cal Due 7-14-00	Cal Due 6-29-00
Bkg 52 cpm	Bkg 54	Bkg 2.0 cpm
Efficiency 25%	Efficiency 25%	Efficiency 121%
MDA 110.4 dpm	MDA 112.3 dpm	MDA 94 dpm

Survey Type Contamination

Building 707
 Location J & K module Survey Area X
 Purpose Reconnaissance Level Characterization

RWP # 007071204Date 3-28-00 Time DaysComments Equipment Biased survey points1 minute pats and swipes See map for locations6 kdp Counts alpha ultra 28cpm**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Flange	30	44	4284	16	GB J40 Crit Drain	0	52	1962
2	S-16 CNVYR	15	4	450	17	Air Vent # 36	0	-4	2880
3	Air Vent # 20	12	16	648	18	S-16 Purple Plate	0	92	11238
4	Step Platform	57	52	1374	19	S-16 Crit Drain	0	36	1080
5	S-16 CNVYR	3	60	7392	20	S-16 CNVYR	171	12	123600
6	J45 GB Portal 001	45	32	732	21	Air Vent # 17	42	-40	1326
7	Air Vent	12	36	2382	22	Monition	0	8	810
8	GB J45 Front Orange Port	12	4	168	23	3 Step Rollaround Stair	9	-4	1140
9	GB J55 ^{Lower} Raise Switch	15	-12	11016	24	Crit Drain Tool Storage	3	84	120
10	Air Vent # 26	3	156	780	25	Air Vent # 15	12	-12	408
11	GB J45 Portal 0001	0	40	990	26	GB K85 under Portal 0003	6	40	816
12	Air Vent # 28	21	8	2478	27	GB K95 under Portal 0011	6	36	15600
13	Dukane 35 Control	3	68	936	28	S-16 CNVYR under ^{Potol} bc40	3	28	2100
14	GB J40 Under Portal 0045	6	44	606	29	Platform ladder	0	-40	2676
15	Air Vent # 34	6	-8	800	30	Air Vent # 6	30	4	180

Date Reviewed 4-3-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

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Drawing Showing Survey Points

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	GBK45 CURRY SIB	24	12	1344	61				
32	FOOT CONTROL	3	-16	1092	62				
33	S18 CRIT Drain	30	-36	162	63				
34	S20 CRIT Drain	9	4	1584	64				
35	AIR Vent #5	30	24	834	65				
36	4 Step Rollaround Ladder	3	-12	2004	66				
37	AIT-K55 DControl Panel	384	60	396	67				
38	Wide 3 Step Stool	0	12	270	68				
39	Top Cabinet	0	-12	1002	69				
40	AIR Vent #1	15	44	402	70				
41	END OF SURVEY				71				
42					72				
43					73				
44					74				
45					75				
46					76				
47					77				
48					78				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

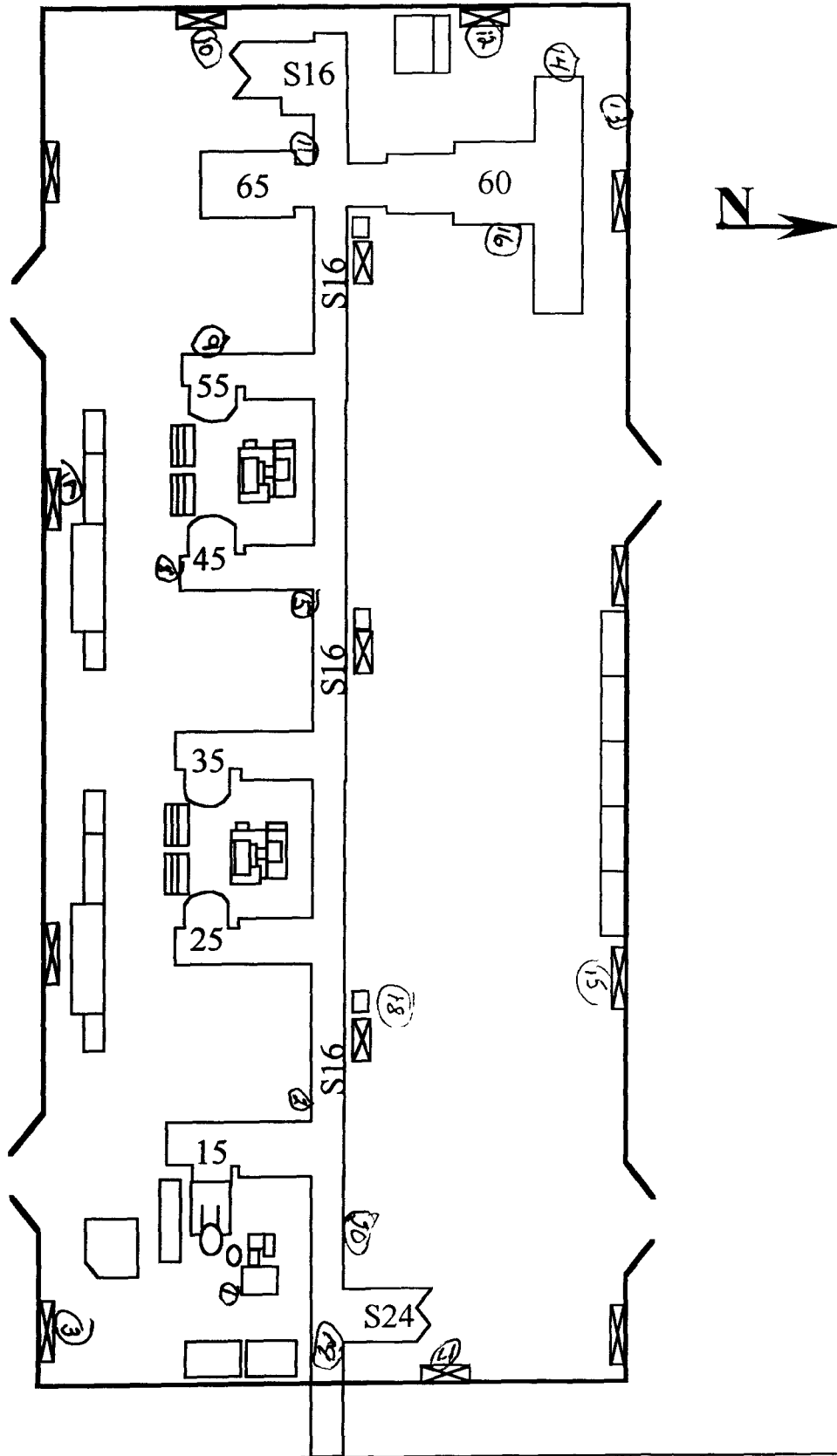
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

3.4.4

Drawing Showing Survey Points

MODULE J



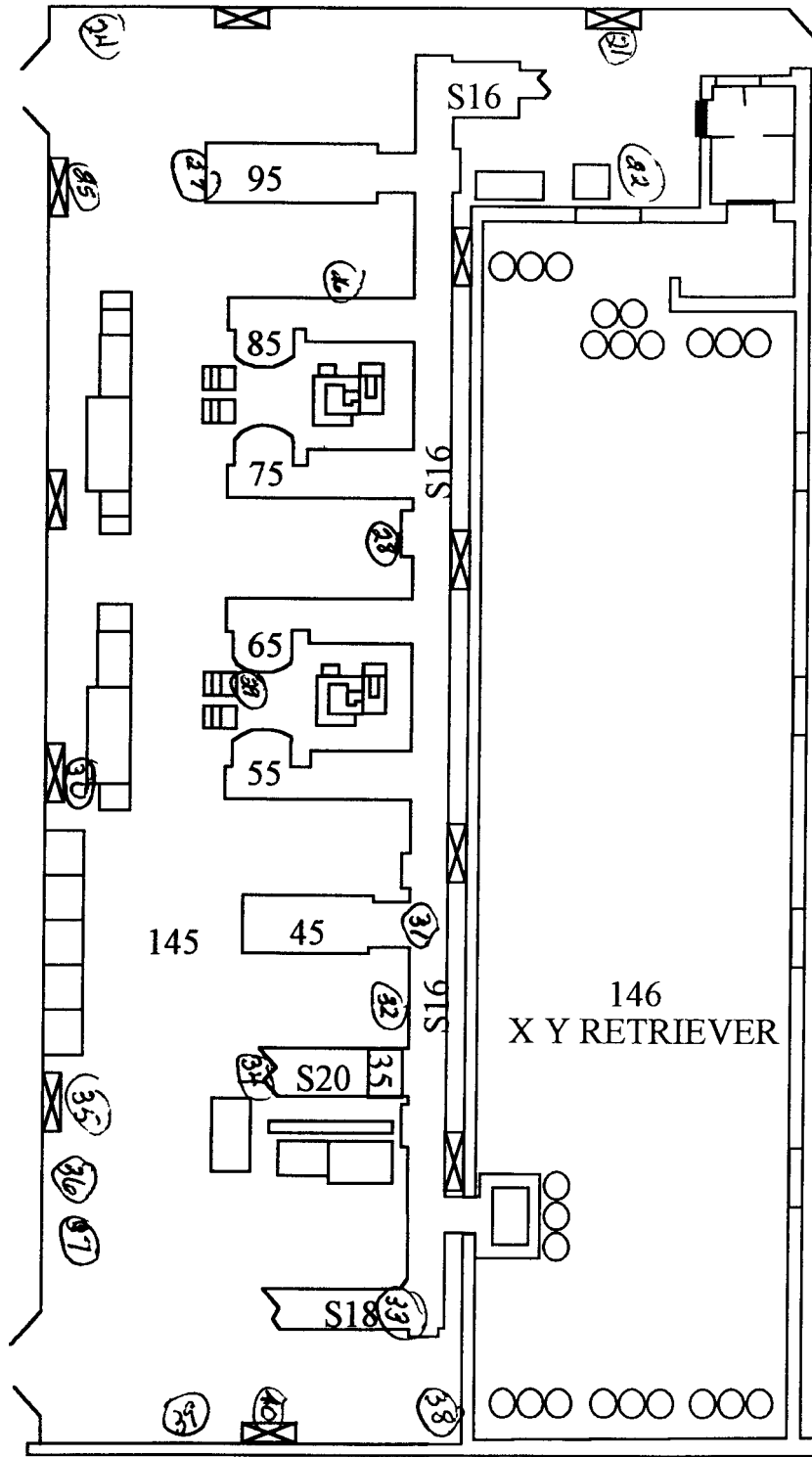
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

4 of 4

Drawing Showing Survey Points

MODULE K



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial #	Serial # 1233
Cal Due 4-10-00	Cal Due 1/19	Cal Due 5-11-00
Bkg 0.4 cpm	Bkg	Bkg 10 cpm
Efficiency 33%	Efficiency 33%	Efficiency 12063
MDA 14.8 dpm	MDA	MDA 94 dpm
Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model BC-4	Model
Serial # 872	Serial #	Serial #
Cal Due 4-12-00	Cal Due 1/19	Cal Due
Bkg 56 cpm	Bkg	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA 114.1 dpm	MDA	MDA

Survey Type Contamination

Building 707
 Location J & K Module Survey Area X
 Purpose Reconnaissance Level Characterization

RWP # 007071204

Date 3-27-00 Time Days

Comments Ceiling / Walls > 2 meters Biased survey po

1 minute pats and swipes See map for locations

6 Kpl Counts alpha electra 28 cpm

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	W > 2m	6	4	24	16	W > 2m	6	4	48
2	" "	3	0	6	17	" "	0	32	48
3	" "	0	-36	12	18	" "	0	32	48
4	" "	0	52	54	19	" "	3	4	30
5	" "	0	-4	30	20	" "	0	12	6
6	" "	3	-12	30	21	" "	3	8	30
7	" "	0	-16	48	22	" "	3	52	30
8	" "	3	-12	18	23	" "	0	24	42
9	" "	0	20	12	24	" "	3	8	54
10	" "	0	24	18	25	Ceiling	3	-18	54
11	" "	0	40	42	26	" "	6	52	60
12	" "	3	0	102	27	" "	0	8	54
13	" "	0	-12	42	28	" "	3	60	84
14	" "	6	40	42	29	" "	0	24	72
15	" "	0	0	24	30	" "	0	-18	72

Date Reviewed 4-3-00 RS Supervision.

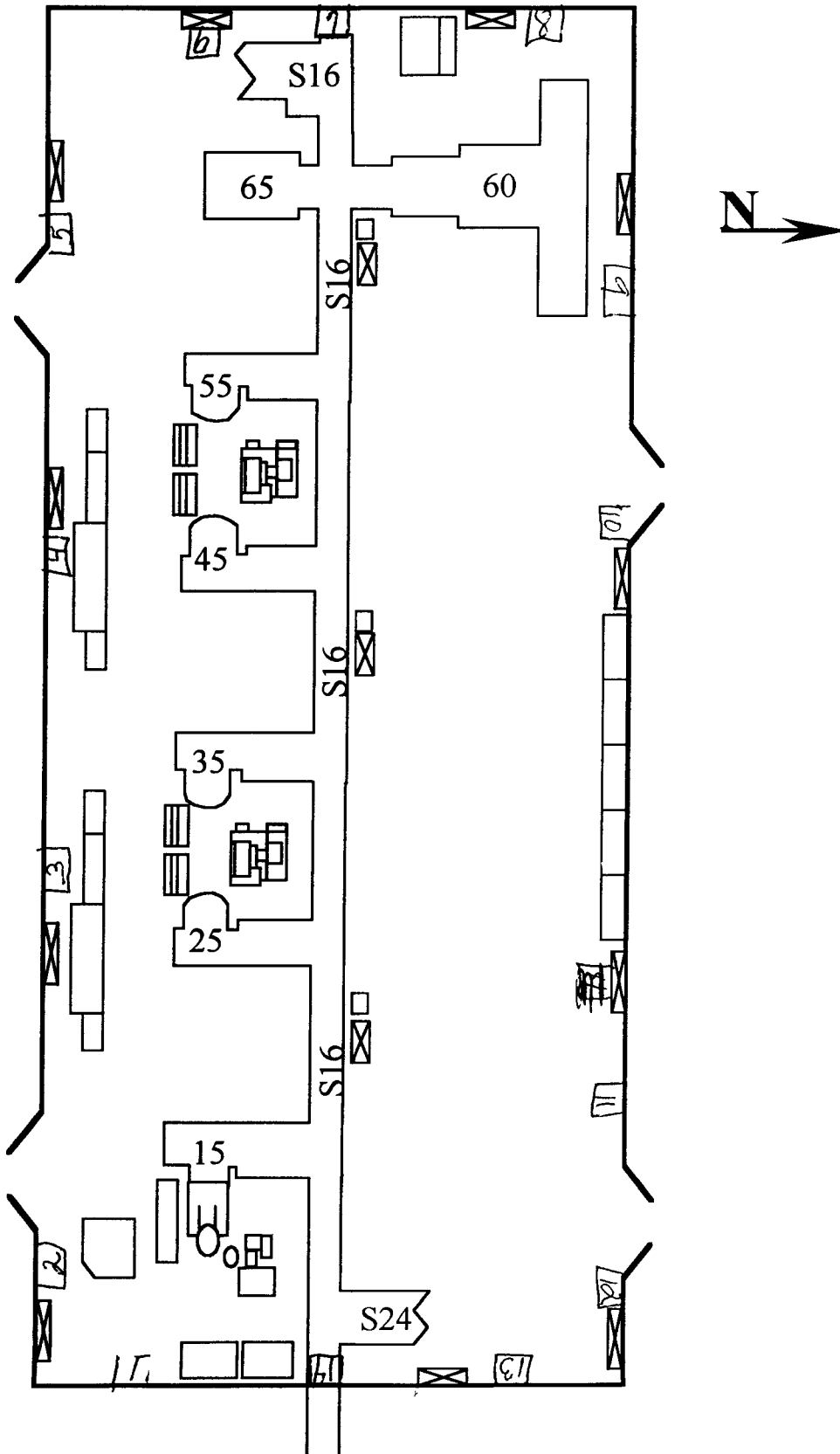
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

2 of 3

MODULE J



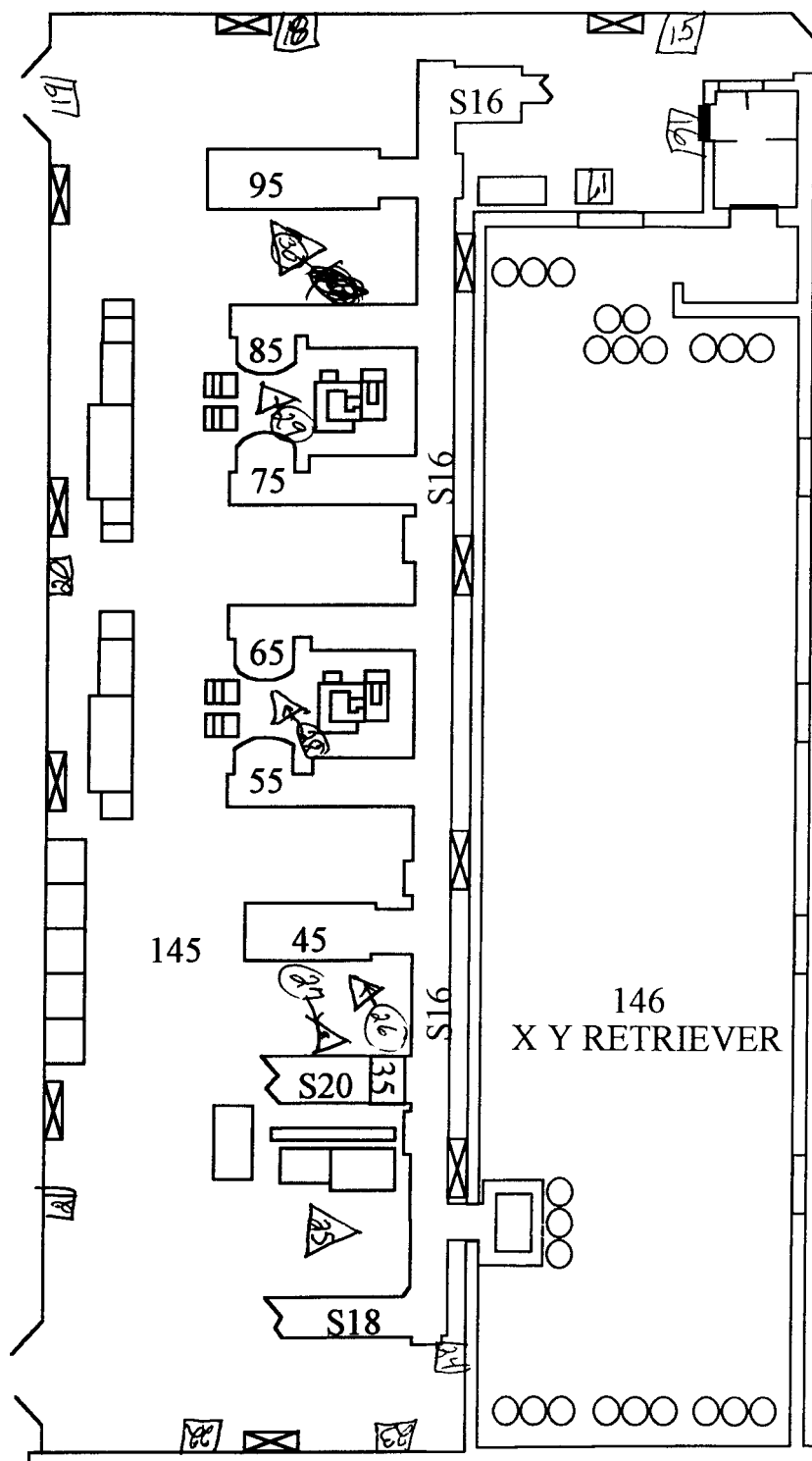
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

3 of 3

MODULE K



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u> <u>NA</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>NA</u>	Serial # <u>3265</u>
Cal Due <u>8-15-00</u>	Cal Due <u>NA</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.0 cpm</u>	Bkg <u>NA</u>	Bkg <u>3.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.01%</u>
MDA <u>8.2 dpm</u>	MDA <u>NA</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u> <u>NA</u>	Mfg <u>NA</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>NA</u>
Serial # <u>959</u>	Serial # <u>NA</u>	Serial # <u>NA</u>
Cal Due <u>7-19-00</u>	Cal Due <u>NA</u>	Cal Due <u>NA</u>
Bkg <u>45 cpm</u>	Bkg <u>NA</u>	Bkg <u>NA</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>NA</u>
MDA <u>103.4 dpm</u>	MDA <u>NA</u>	MDA <u>NA</u>

Survey Type Contamination

Building 707
 Location J+K module Survey Area X
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 5-4-00 Time Pm
 RCT NA _____
 Print name / Signature / Emp #

 Comments Equipment Biased survey points
1 minute pats and swipes See map for locations
SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	SHELF	3	0	72	16	NA			
2	SHELF	0	-28	66	17				
3	ELECT CABINET	0	48	72	18				
4	CONTROL CABINET	0	32	192	19				
5	PIPING	0	-20	168	20				
6	END OF SURVEY			NA	21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				
15	NA				30				NA

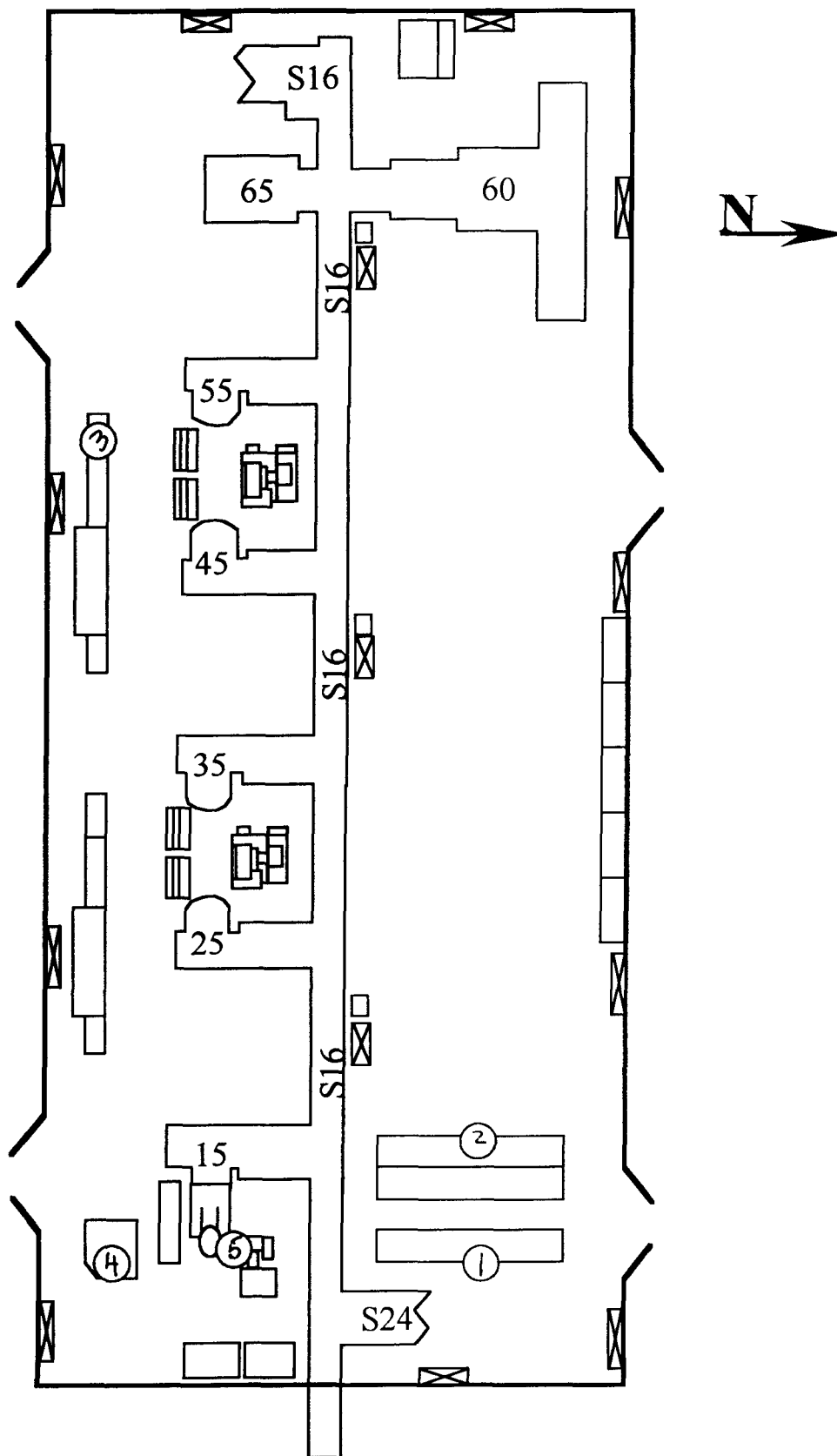
Date Reviewed 5/5/00 RS Supervision _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE J



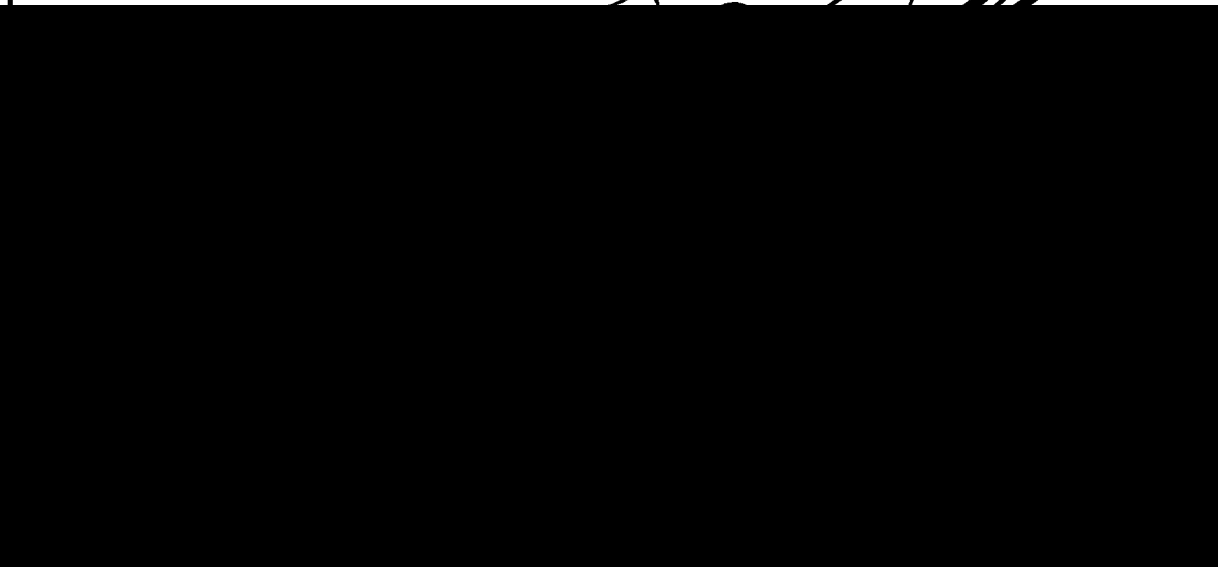
SURVEY PACKAGE TRACKING FORM

[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3	
Survey Area Y		Survey Unit N/A		Area (m ²) 740	
Survey Unit Description Non-Radiological rooms 150, 150A, 150B 151A, 151B, 151C 153A, 153B, 153C, 153D, 153E, 155, 155A, 157, 159A, 159B, 159C, 159, 161, 163, 165D, 165A, 165B 165C, 165E 176, 174 172, 172A, 164, 162, 160A, 160, 158, 156, 154, 149, 152, and corridors <u>EXCLUDES ROOMS 164, 166, 170, 178 AND 178A</u> Building 707 radiological areas are posted as fixed contamination areas					
Survey Type			Classification		
RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
129	15	30	0	0	129
Building		Type		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707
Survey Area: Y	Survey Unit: N/A
Survey Unit Description: NON-RADIOLOGICAL ROOMS 150 150A, 150B, 151A, 151B, 151C, 153A, 153B, 153C, 153D, 153E, 155, 155A, 157, 159A, 159B, 159C, 159, 161, 163, 165D, 165A, 165B, 165C, 165E, 176, 174, 172, 172A, 164, 162, 160A, 160, 158, 156, 154, 149, 152 <u>EXCLUDES ROOMS 164, 166, 170, 178 AND 178A</u> BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation: 	
<small>RSBS Manager Printed Name</small>	<small>Employee #</small>
<small>RSBS Manager Signature</small>	<small>Date</small>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707
Survey Area: Y		Survey Unit N/A
Survey Unit Description: Non-Radiological rooms 150, 150A, 150B, 151A, 151B, 151C, 153A, 153B, 153C, 153D, 153E, 155, 155A, 157, 159A, 159B, 159C, 159, 161, 163, 165D, 165A, 165B, 165C, 165E, 176, 174, 172, 172A, 164, 162, 160A, 160, 158, 156, 154, 149, 152 and corridors <u>EXCLUDES ROOMS 164, 166, 170, 178 AND 178A</u> Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	FLOORS/WALLS < 2 meters 129 unbiased survey points uniformly distributed within each room, taken as follows <ul style="list-style-type: none"> - 3 survey points per room (2 per floor/ 1 wall only) - Remainder of survey points in corridors <u>Biased</u> survey points NONE CEILINGS/WALLS > 2 meters 15 biased surveys with focus on following areas <ul style="list-style-type: none"> - Rooms directly adjacent (shared walls) to <u>rooms</u> posted as RBA's (excludes corridors) - Areas/rooms previously used for egress to/from the radiological areas - Stained or discolored areas - Areas around pipe or other penetrations that cross from RBA to non-RBA's EQUIPMENT 30 biased survey points on equipment with one or more samples from <ul style="list-style-type: none"> - Piping/ductwork which connects with areas in the RBA - Room exhaust ducts in 5 different rooms/offices - Survey points on top of overhead piping (where locations are accessible through reach tools) 	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID 99-0002		Building 707
Survey Area: Y		Survey Unit N/A
Survey Unit Description: Non-Radiological rooms 150, 150A, 150B, 151A, 151B, 151C, 153A, 153B, 153C, 153D, 153E, 155, 155A, 157, 159A, 159B, 159C, 159, 161, 163, 165D, 165A, 165B, 165C, 165E, 176, 174, 172, 172A, 164, 162, 160A, 160, 158, 156, 154, 149, 152 and corridors <u>EXCLUDES ROOMS 164, 166, 170, 178 AND 178A</u> Building 707 radiological areas are posted as fixed contamination areas		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 129 1 m ² surface scans shall be taken at each location identified for surface activity measurements Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Pa superseded 01/18/00 JF Chg #2
SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building: 707
Survey Area: Y	Survey Unit: N/A
Survey Unit Description: Non-Radiological rooms 150, 150A, 150B, 151A, 151B, 151C, 153A, 153B, 153C, 153D, 153E, 155, 155A, 157, 159A, 159B, 159C, 159, 161, 163, 165D, 165A, 165B, 165C, 165E, 176, 174, 172, 172A, 164, 162, 160A, 160, 158, 156, 154, 149, 152 and corridors <u>EXCLUDES ROOMS 164, 166, 170, 178 AND 178A</u> Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none">- Direct alpha contamination- Direct beta contamination- Removable alpha contamination- Removable beta contamination- 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building: 707
Survey Area: Y	Survey Unit: N/A
Survey Unit Description: Non-Radiological rooms 150, 150A, 150B, 151A, 151B, 151C, 153A, 153B, 153C, 153D, 153E, 155, 155A, 157, 159A, 159B, 159C, 159, 161, 163, 165D, 165A, 165B, 165C, 165E, 176, 174, 172, 172A, 164, 162, 160A, 160, 158, 156, 154, 149, 152 and corridors <u>EXCLUDES ROOMS 164, 166, 170, 178 AND 178A</u> Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none">- Direct alpha contamination- Removable alpha contamination- Removable beta contamination- 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

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Pa superseded 01/18/00 Jff Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID 99-0002	Building 707
Survey Area Y	Survey Unit N/A
Survey Unit Description. Non-Radiological rooms 150, 150A 150B 151A, 151B 151C, 153A, 153B, 153C, 153D 153E, 155 155A, 157, 159A, 159B, 159C, 159, 161, 163, 165D, 165A, 165B, 165C, 165E 176, 174 172, 172A 164, 162 160A, 160, 158 156, 154 149, 152 and corridors <u>EXCLUDES ROOMS 164, 166, 170, 178 AND 178A</u> Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i e , non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e g , elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and <u>in addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e g , indicate which direction is North) • Other appropriate information (e g , "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc) 	

593

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: Y	Survey Unit N/A
Survey Unit Description: : Non-Radiological rooms 150, 150A, 150B 151A 151B, 151C, 153A, 153B, 153C 153D, 153E, 155, 155A, 157, 159A, 159B, 159C, 159, 161, 163, 165D, 165A, 165B, 165C, 165E, 176, 174, 172, 172A, 164, 162, 160A, 160, 158 156 154, 149, 152 and corridors <u>EXCLUDES ROOMS 164, 166, 170, 178 AND 178A</u> Building 707 radiological areas are posted as fixed contamination areas	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4- Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID. 99-0002		Building 707	
Survey Area: Y		Survey Unit N/A	
Survey Type. Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys		I	db
Total Activity Surveys		I	db
Exposure Rate Surveys		NA	NA
Removable Surveys		I	db
Media Samples		NA	NA
Volumetric Samples		NA	NA
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys		I	db
Total Activity Surveys		I	db
Exposure Rate Surveys		NA	NA
Removable Surveys		I	db
Media Samples		NA	NA
Volumetric Samples		NA	NA
Comments			

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____

Building _____

Location* _____

Purpose _____

RWP # _____

Date _____

Time _____

RCT _____

Print name _____

Signature _____

Emp # _____

RCT _____

Print name _____

Signature _____

Emp # _____

PRL #: _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1				26			
2				27			
3				28			
4				29			
5				30			
6				31			
7				32			
8				33			
9				34			
10				35			
11				36			
12				37			
13				38			
14				39			
15				40			
16				41			
17				42			
18				43			
19				44			
20				45			
21				46			
22				47			
23				48			
24				49			
25				50			

Date Reviewed: _____

RS Supervision: _____

Print Name _____

Signature _____

Emp # _____

597

345 / 466

INITIAL TECHNOLOGY SIDE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE.

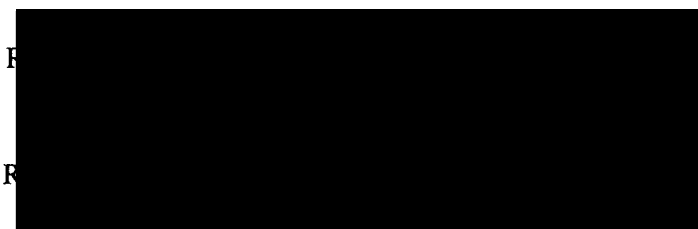
**SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07 02,
*Contamination Monitoring Requirements.***

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1270</u>	Serial # <u>1518</u>
Cal Due <u>8-15-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>115 dpm</u>	MDA <u>129 dpm</u>	MDA <u>942/m</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u> </u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u> </u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u> </u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u> </u>
Bkg <u>38 cpm</u>	Bkg <u>41 cpm</u>	Bkg <u> </u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u> </u>
MDA <u>959 dpm</u>	MDA <u>992 dpm</u>	MDA <u> </u>

Survey Type Contamination

Building 707
 Location Offices Main Hall Survey Area Y
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 4-5-00 Time 1630

Comments Floor / Walls < 2 meters Unbiased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F	0	-60	-12	16	F	0	16	0
2	F	0	-4	36	17	F	0	44	18
3	W	0	48	42	18	W	0	-16	12
4	F	0	36	12	19	F	0	60	0
5	F	0	48	42	20	F	0	24	36
6	W	0	4	0	21	W	0	-32	18
7	F	0	-8	-6	22	F	0	20	18
8	F	0	-12	-6	23	F	0	12	30
9	W	6	-12	-6	24	W	0	-28	18
10	F	0	20	42	25	F	0	28	0
11	F	0	16	48	26	F	0	-24	6
12	W	6	-4	30	27	W	3	-12	6
13	F	0	0	18	28	F	0	-12	24
14	F	0	0	18	29	F	0	-16	6
15	W	0	36	6	30	W	0	56	-6

Date Reviewed. 5-2-00 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Point #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	F	0	-4	24	61	F	0	24	12
32	F	0	44	12	62	F	0	4	6
33	W	0	64	18	63	W	0	32	24
34	F	0	-8	24	64	F	0	16	6
35	F	0	-8	6	65	W	0	4	6
36	W	0	28	30	66	F	0	-48	12
37	F	0	32	-24	67	F	0	44	0
38	F	3	0	-18	68	F	0	-28	12
39	W	0	-8	-30	69	W	0	4	18
40	F	0	-16	-6	70	F	0	40	0
41	F	0	-12	18	71	F	0	4	18
42	W	0	-20	6	72	W	0	12	6
43	F	0	16	6	73	F	0	20	18
44	F	0	0	0	74	F	0	28	36
45	W	0	-12	12	75	W	0	32	6
46	F	0	-44	12	76	F	0	44	42
47	F	0	-28	12	77	F	3	28	18
48	W	0	-12	12	78	SP ⁴⁵⁻⁰⁰ W	0	-36	24
49	F	0	-28	18	79	F	0	-20	30
50	F	0	-24	24	80	F	0	44	12
51	W	3	16	12	81	W	0	60	6
52	F	0	4	6	82	F	0	-64	18
53	F	3	0	18	83	F	0	16	0
54	W	0	-16	0	84	W	0	-12	0
55	W	3	16	0	85	F	0	36	18
56	F	0	-32	24	86	F	3	12	6
57	F	0	20	18	87	W	0	4	6
58	F	0	20	24	88	F	0	-20	6
59	F	0	44	-6	89	F	0	52	12
60	W	0	36	6	90	W	0	12	0

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

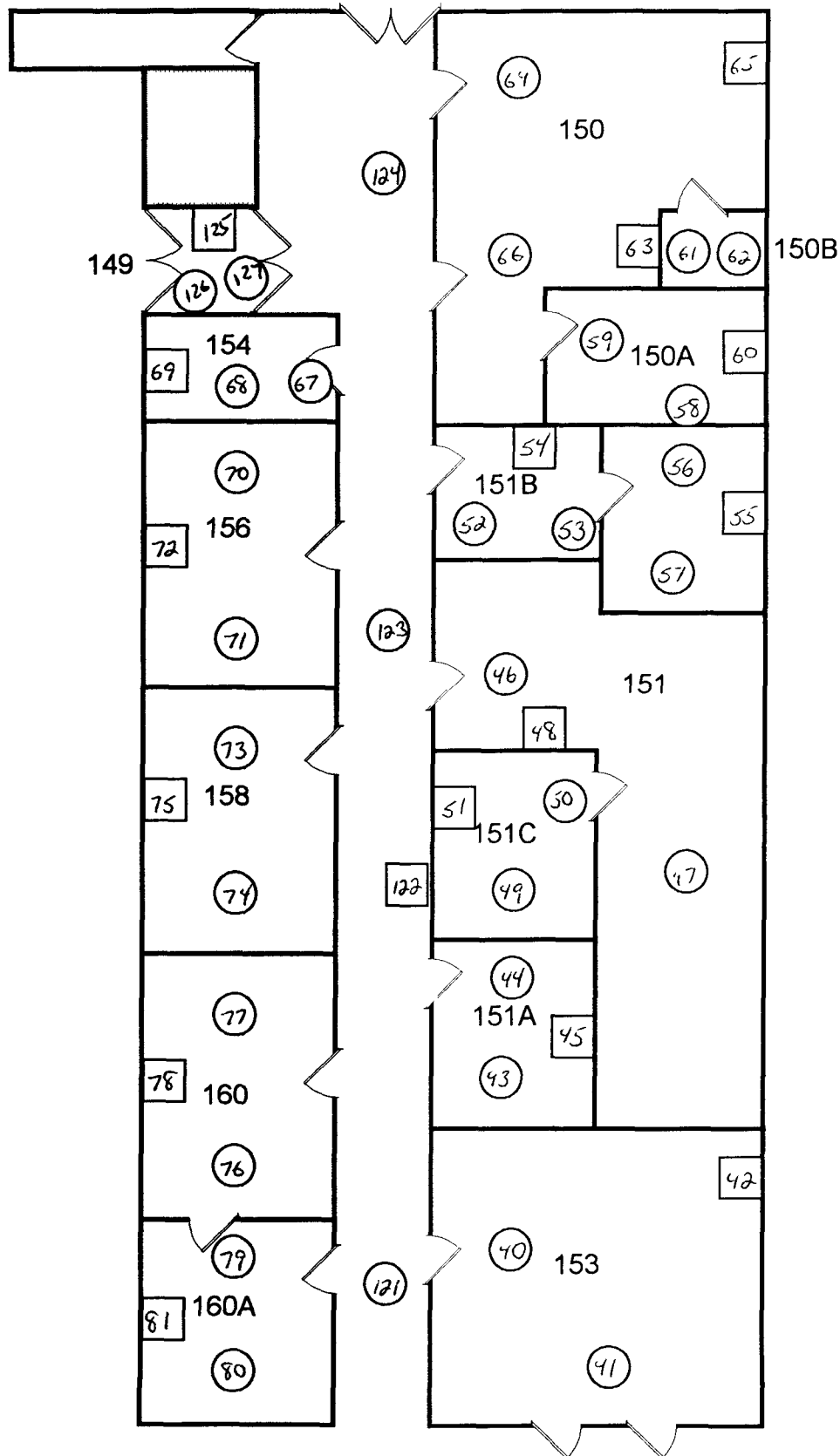
RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Point #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
91	F	0	12	0	121	F	0	36	6
92	F	0	-12	0	122	W	0	40	18
93	W	0	8	12	123	F	0	12	6
94	F	0	0	0	124	F	0	16	6
95	F	0	4	0	125	W	0	-68	6
96	W	6	20	6	126	F	0	-40	0
97	F	0	-20	12	127	F	0	-56	6
98	F	0	-48	0	128	F	0	-36	-6
99	W	0	-8	6	129	W	0	12	18
100	F	0	40	36	130	END OF SURVEY			NA
101	F	0	20	12	131				
102	W	0	36	24	132				
103	F	0	16	0	133				
104	F	0	20	0	134				
105	W	0	0	36	135				
106	F	0	-20	6	136				
107	F	0	16	0	137				
108	F	0	40	30	138				
109	F	0	-28	6	139				
110	W	0	-12	6	140				
111	W	3	-24	0	141				
112	F	0	-40	12	142				
113	F	0	4	42	143				
114	W	0	4	6	144				
115	F	0	56	0	145				
116	F	0	0	18	146				
117	W	3	28	0	147				
118	F	3	20	0	148				
119	F	0	0	0	149				
120	W	6	0	18	150	NA			

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

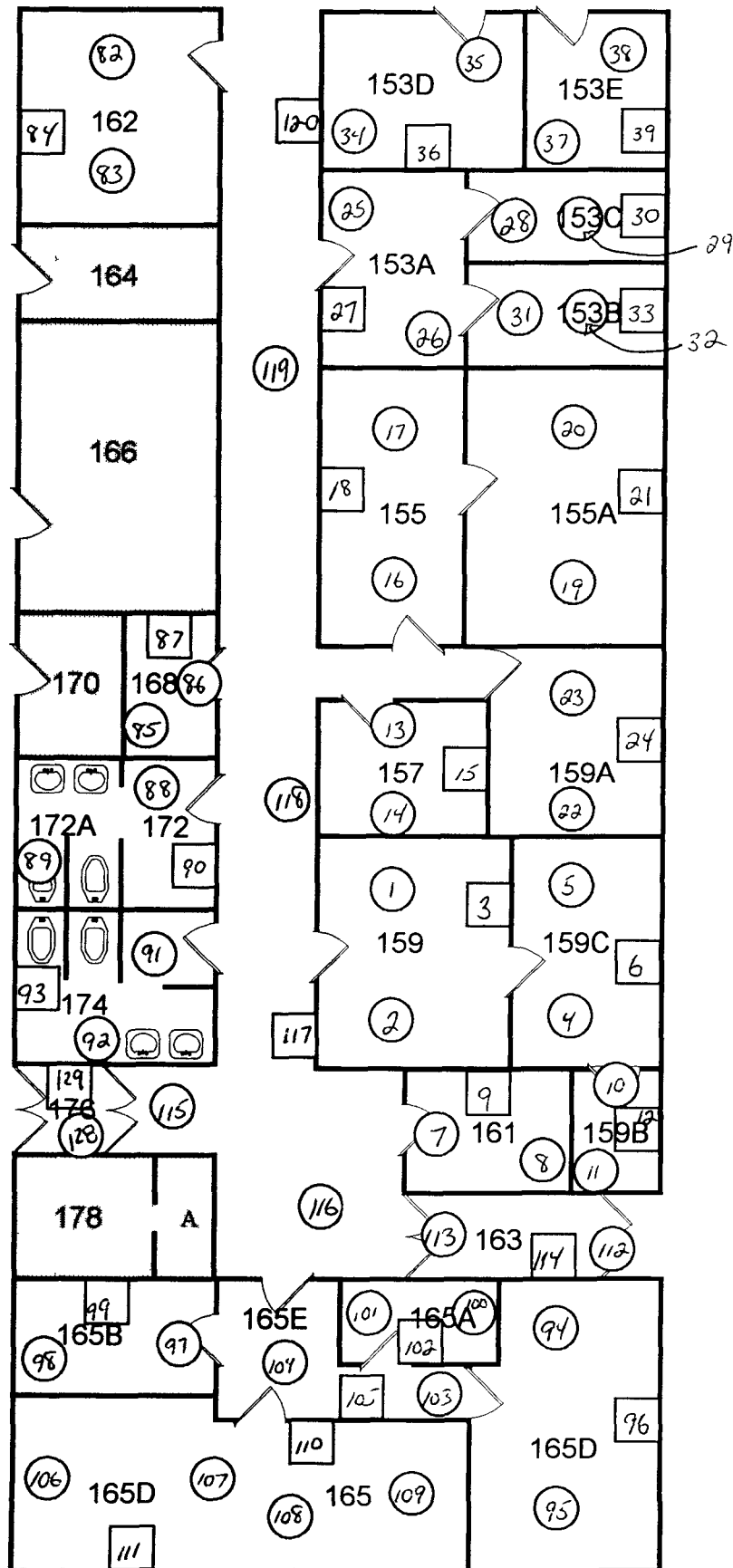
Drawing Showing Survey Points

707
COLD OFFICES
NORTH

602

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

707
COLD OFFICES
SOUTH

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>1245</u>
Cal Due <u>8-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.0 cpm</u>	Bkg <u>0.6 cpm</u>	Bkg <u>3.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>22.57%</u>
MDA <u>8.2 dpm</u>	MDA <u>16.3 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NA</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u> </u>
Serial # <u>959</u>	Serial # <u>833</u>	Serial # <u> </u>
Cal Due <u>7-19-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u> </u>
Bkg <u>3.9 cpm</u>	Bkg <u>3.8 cpm</u>	Bkg <u> </u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u> </u>
MDA <u>97. dpm</u>	MDA <u>95.9</u>	MDA <u>NA</u>

Survey Type Contamination


Building 707
 Location COLD OFFICES Survey Area Y
 Purpose Reconnaissance Level Characterization

RWP # N/ADate 4-26-00 Time 1500RCT 

RCT NA
 Print name / Signature / Emp #

Comments Equipment Biased survey points1 minute pats and swipes See map for locations**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	overhead pipes door 444	0	4	-18	16	PIPING	0	44	12
2	vent - C	0	12	0	17	vent	3	24	-6
3	vent - C	3	-20	0	18	vent	0	-12	0
4	pipng door 333	0	-24	-6	19	vent	0	48	0
5	pipng	0	-12	0	20	PIPING	3	-52	0
6	vent	0	-8	-12	21	PIPING	6	20	-6
7	vent	0	48	42	22	vent	0	-24	-12
8	EQUIPMENT	0	24	-12	23	vent	0	-12	-6
9	vent	0	40	12	24	EQUIP	0	28	18
10	SINK	0	0	-18	25	vent	6	68	-18
11	vent	0	-32	0	26	EQUIP	0	12	-12
12	vent	6	-16	-6	27	vent	0	16	12
13	EQUIP - Piping - C	3	-12	-12	28	vent	0	-12	-12
14	vent	0	40	0	29	vent	0	8	12
15	vent	0	4						

Date Reviewed 5-2-00 RS Supervision 

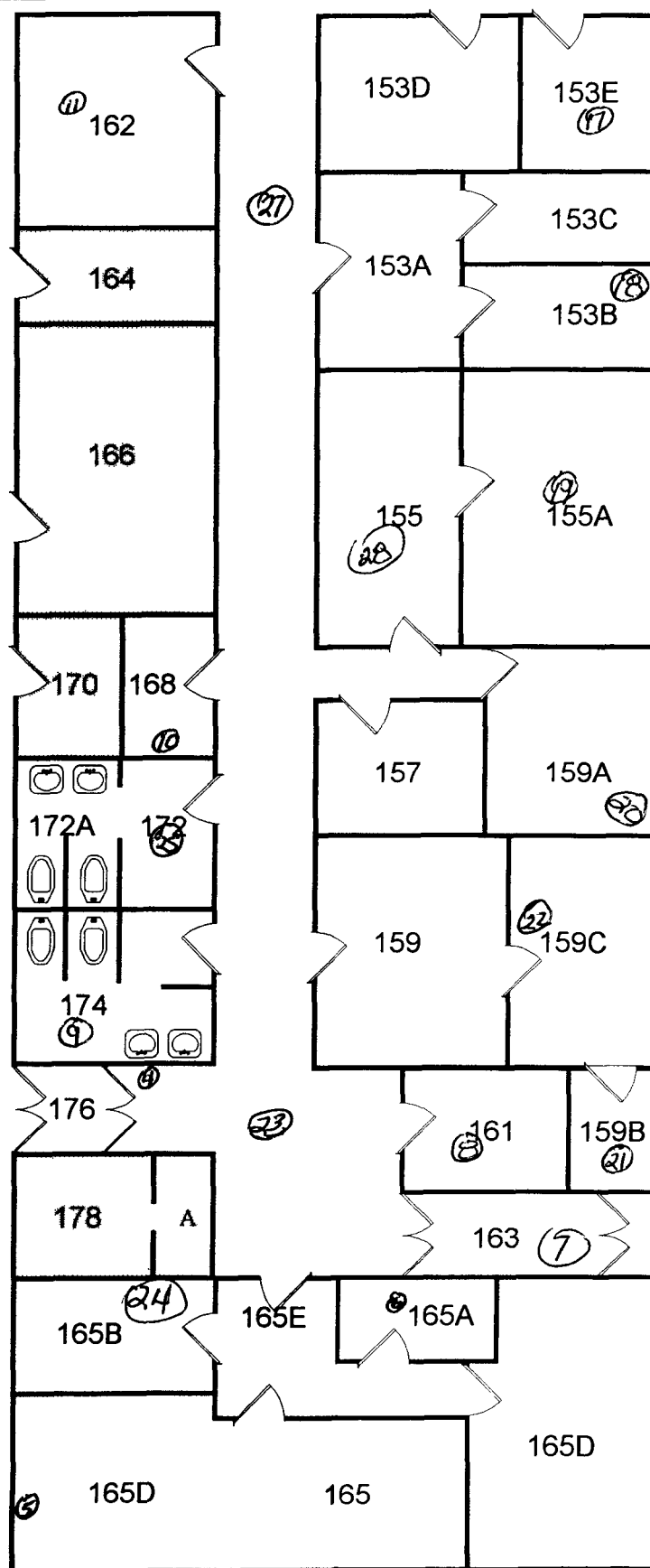
Print Name

Signature

Emp #

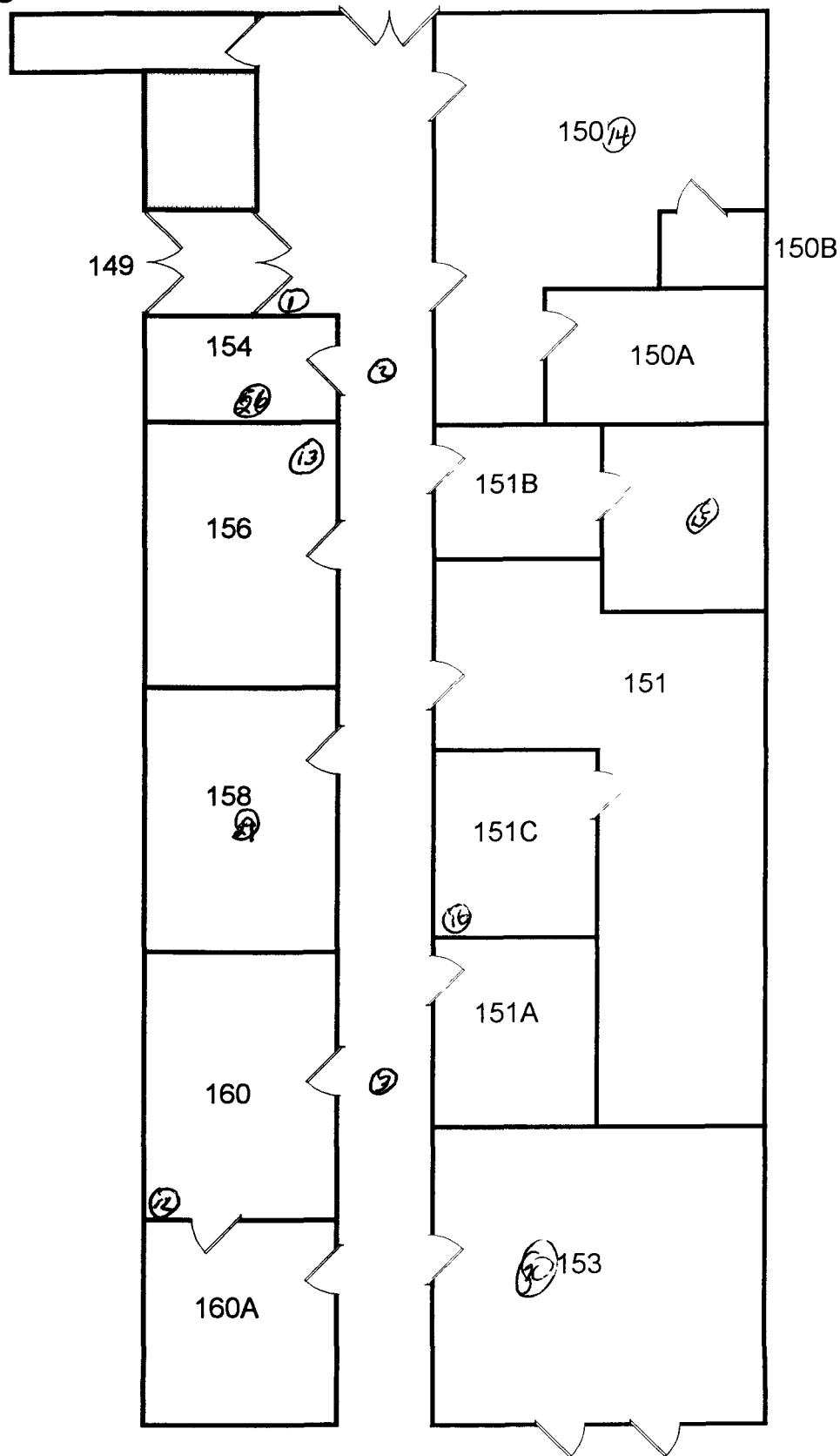
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

707
COLD OFFICES
SOUTH

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

Drawing Showing Survey Points

707
COLD OFFICES
NORTH

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>NA</u> Eberline	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u> </u>	Serial # <u>1233</u>
Cal Due <u>8-15-00</u>	Cal Due <u> </u>	Cal Due <u>5-11-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u> </u>	Bkg <u>2 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>20 dpm</u>	MDA <u>NA</u>	MDA <u>94 dpm</u>

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u> </u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u> </u>
Serial # <u>833</u>	Serial # <u> </u>	Serial # <u> </u>
Cal Due <u>7-14-00</u>	Cal Due <u> </u>	Cal Due <u>NA</u>
Bkg <u>46.0 cpm</u>	Bkg <u> </u>	Bkg <u> </u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u> </u>
MDA <u>1015 dpm</u>	MDA <u>NA</u>	MDA <u> </u>

Survey Type Contamination

Building 707

Location 107 Main Hall Survey Area Y

Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 7-19-00 Time 1630

Comments Ceiling / Walls > 2 meters Biased survey points

1 minute pats and swipes See map for locations

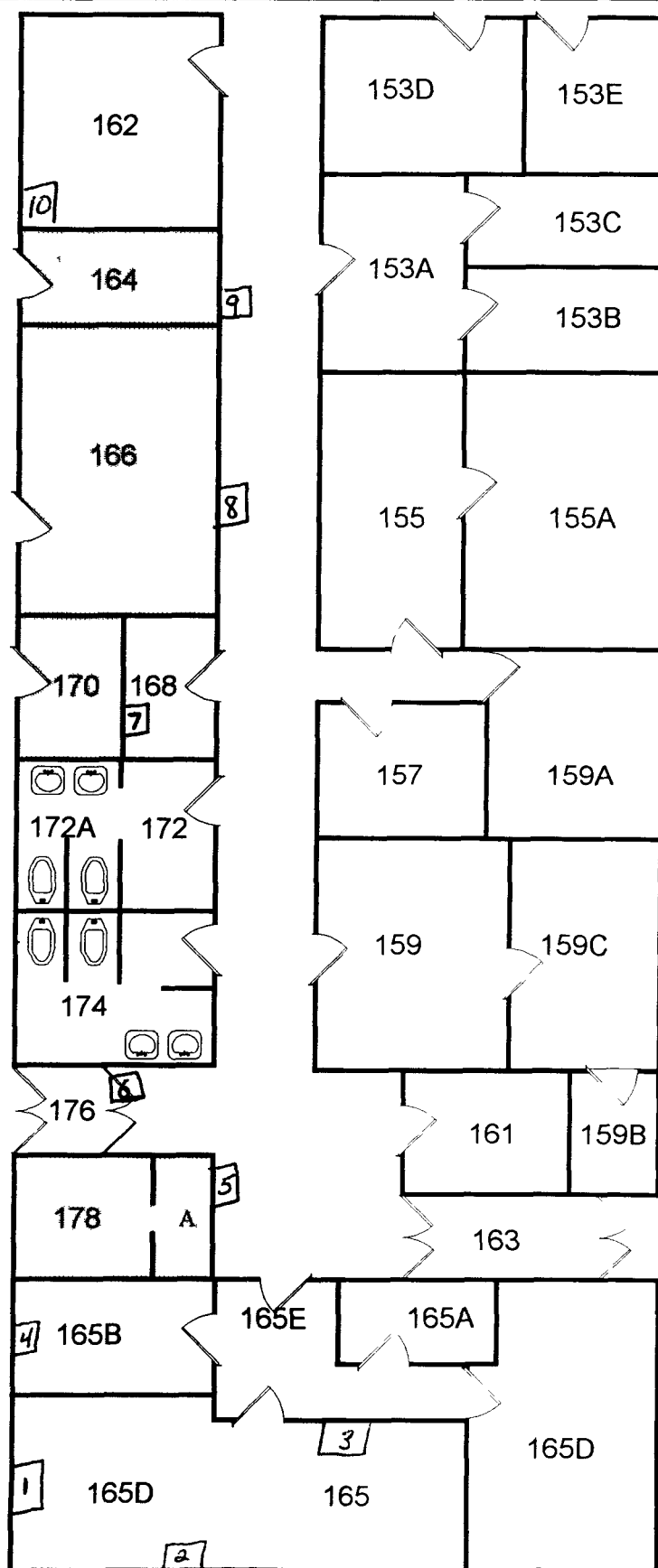
SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	See Map	0	-12	0	16	NA			
2	See Map	0	-24	0	17				
3	See Map	0	-8	12	18				
4	See Map	0	48	0	19				
5	See Map	0	44	0	20				
6	See Map	3	36	0	21				
7	See Map	0	40	0	22				
8	See Map	0	40	12	23				
9	See Map	0	0	12	24				
10	See Map	0	4	12	25				
11	See Map	0	12	6	26				
12	See Map	0	56	0	27				
13	See Map	0	36	-12	28				
14	See Map	0	56	-12	29				
15	See Map	0	24						

Date Reviewed 5-2-00 RS Supervision

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



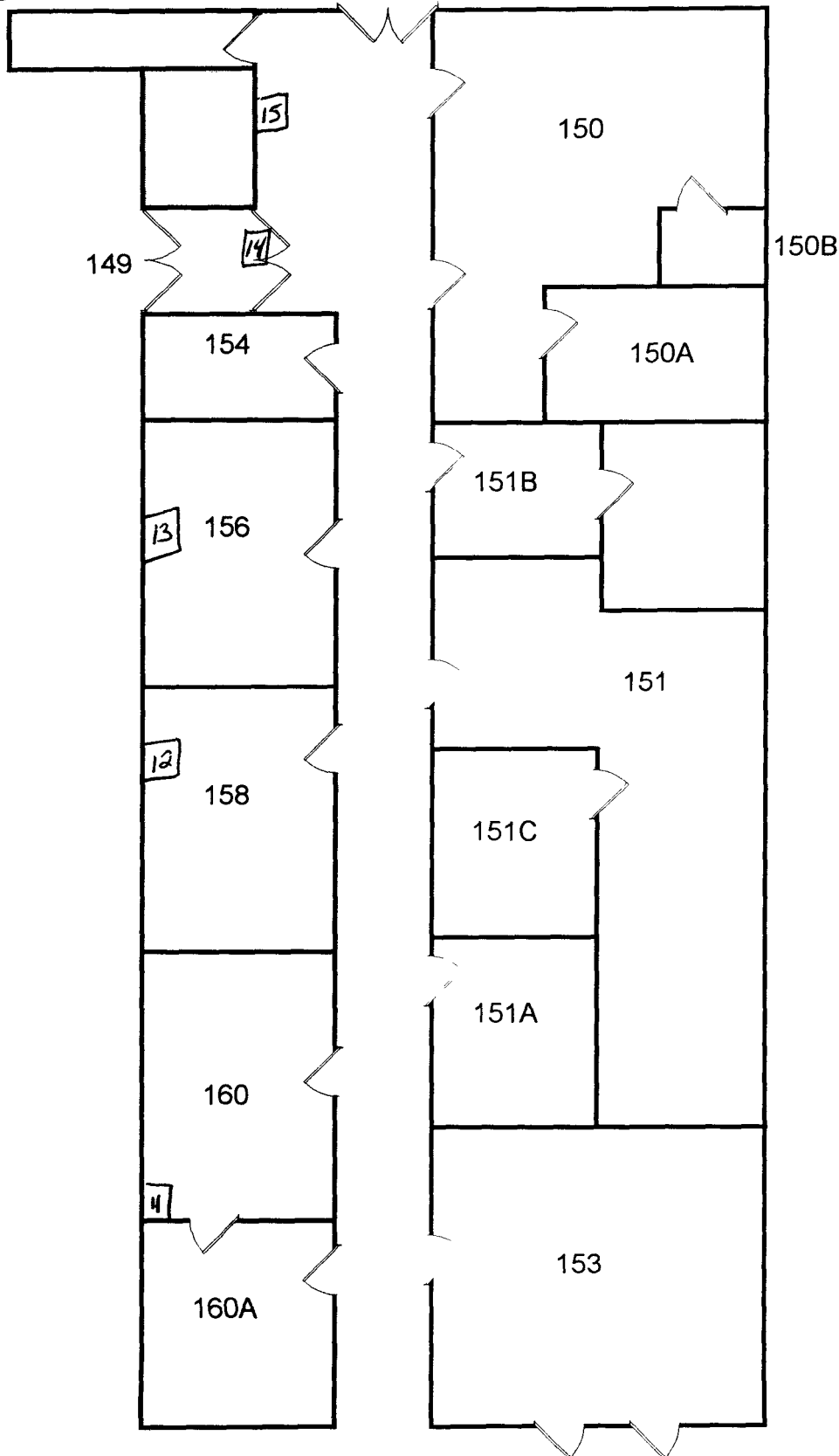
408

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

707
COLD OFFICES
NORTH



[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0002		Building: 707 (EXT /ROOF)		Type 3	
Survey Area Z		Survey Unit N/A		Area (m ²) per building	
Survey Unit Description External surfaces/roof of building 707 (including roof sections 1, 2, and 3)					
Survey Type			Classification		
RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
37	26	0	2	0	63
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

Page Superseded by 4/28/00 Change #4

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707 (EXT /ROOF)		Type 3	
Survey Area Z		Survey Unit N/A		Area (m ²) per building	
Survey Unit Description External surfaces/roof of building 707 (including roof sections 1, 2, and 3)					
Survey Type			Classification		
RLC Survey X FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
67	46	0	2	0	113
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707 (EXTERIOR/ROOF)
Survey Area: Z	Survey Unit: N/A
Survey Unit Description: EXTERNAL SURFACES/ROOF OF BUILDING 707 (INCLUDING ROOF SECTIONS 1, 2, AND 3)	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input checked="" type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to roofs, stairs, or elevated structures external to buildings may require additional approvals from security personnel Verify approvals prior to commencing surveys	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation: <div style="background-color: black; width: 100%; height: 250px; margin-top: 10px;"></div>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707 (EXTERIOR/ROOF)
Survey Area: Z		Survey Unit N/A
Survey Unit Description: External surfaces/roof of building 707 (including roof sections 1, 2, and 3)		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	ROOF/EXTERIOR WALLS 37 unbiased survey points uniformly distributed as follows <ul style="list-style-type: none"> - 12 survey points per exterior wall sections around building at an elevation < 2 meters - 25 survey points on section 1, 2 and 3 of roof 26 biased survey points <ul style="list-style-type: none"> - 2 survey points <u>each</u> of 3 different roof drains/downspouts on /near ground level - 20 survey points distributed among the following locations roof exhaust vents/duct work and capped roof openings 	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4

Page Superseded 4/28/00 EDM change #5

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707 (EXTERIOR/ROOF)
Survey Area: Z		Survey Unit N/A
Survey Unit Description: External surfaces/roof of building 707 (including roof sections 1, 2, and 3)		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>ROOF/EXTERIOR WALLS</p> <p>67 <u>unbiased</u> survey points uniformly distributed as follows</p> <ul style="list-style-type: none"> - 3 survey points per each exterior wall section around building at an elevation < 2 meters (18 points total) - 8 survey points on section 1 of roof, 35 survey points on section 2 of roof, and 6 points on section 3 of roof (49 points total) <p>46 <u>biased</u> survey points</p> <ul style="list-style-type: none"> - 2 survey points <u>each</u> of 3 different roof drains/downspouts on /near ground level - 40 survey points distributed among the following locations: roof exhaust vents/duct work and capped roof openings 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building: 707
Survey Area: Z		Survey Unit: N/A
Survey Unit Description: External surfaces/roof of building 707 (including roof sections 1, 2, and 3)		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	ROOF/EXTERIOR WALLS 63 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted.	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 2 biased roof material samples taken as follows - Two samples taken near ventilation ductwork/plenum exhausts on roof sections 2 and 3	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Page Superseded EDM 4/25/00 EDM Change #6

(SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont))

Package ID: 99-0002		Building 707
Survey Area: Z		Survey Unit N/A
Survey Unit Description: External surfaces/roof of building 707 (including roof sections 1, 2, and 3)		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	ROOF/EXTERIOR WALLS 113 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted.	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 2 biased roof material samples taken as follows - Two samples taken near ventilation ductwork/plenum exhausts on roof sections 2 and 3	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Ag superseded 01/18/00 by #2

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: Z	Survey Unit N/A
Survey Unit Description: External surfaces/roof of building 707 (including roof sections 1, 2, and 3)	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: Z	Survey Unit N/A
Survey Unit Description: External surfaces/roof of building 707 (including roof sections 1, 2, and 3)	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media "</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

By superseded 01/18/00 [signature] Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID. 99-0002	Building 707
Survey Area. Z	Survey Unit N/A
Survey Unit Description: : External surfaces/roof of building 707 (including roof sections 1, 2, and 3)	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms. "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02. Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in <u>addition</u> to the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering. Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building: 707
Survey Area: Z	Survey Unit: N/A
Survey Unit Description: • External surfaces/roof of building 707 (including roof sections 1, 2, and 3)	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 707 (EXTERIOR/ROOF)	
Survey Area: Z		Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys		<i>[Signature]</i>	KDM
Total Activity Surveys		<i>[Signature]</i>	KDM
Exposure Rate Surveys		NA	NA
Removable Surveys		<i>[Signature]</i>	KDM
Media Samples		<i>[Signature]</i>	KDM
Volumetric Samples		NA	NA
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys		<i>[Signature]</i>	KDM
Total Activity Surveys		<i>[Signature]</i>	KDM
Exposure Rate Surveys		NA	NA
Removable Surveys		<i>[Signature]</i>	KDM
Media Samples		<i>[Signature]</i>	KDM
Volumetric Samples		NA	NA
Comments.			
<div style="background-color: black; height: 100px; width: 100%;"></div>			
		11/00	
		22/00	
		14/00	

ENVIRONMENTAL TECHNOLOGY SURVEY

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____		
Model _____	Model _____	Model _____	Building _____		
Serial # _____	Serial # _____	Serial # _____	Location* _____		
Cal Due _____	Cal Due _____	Cal Due _____	Purpose _____		
Bkg _____	Bkg _____	Bkg _____	RWP # _____		
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____		
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____		
			Print name Signature Emp #		
Mfg. _____	Mfg. _____	Mfg. _____	RCT _____ / _____ / _____		
Model _____	Model _____	Model _____	Print name Signature Emp #		
Serial # _____	Serial # _____	Serial # _____			
Cal Due _____	Cal Due _____	Cal Due _____			
Bkg _____	Bkg _____	Bkg _____			
Efficiency _____	Efficiency _____	Efficiency _____			
MDA _____	MDA _____	MDA _____			

PRL # : _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1				26			
2				27			
3				28			
4				29			
5				30			
6				31			
7				32			
8				33			
9				34			
10				35			
11				36			
12				37			
13				38			
14				39			
15				40			
16				41			
17				42			
18				43			
19				44			
20				45			
21				46			
22				47			
23				48			
24				49			
25				50			

Date Reviewed: _____

RS Supervision: _____

Print Name

Signature

Emp #

624

354 / 466

INTERNAL TECHNOLOGY SIDE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE.

**SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07 02,
*Contamination Monitoring Requirements***

ROCKY PLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 846	Serial # 1054	Serial # 3260
Cal Due 8-15-00	Cal Due 8-23-00	Cal Due 7-17-00
Bkg 0.2 cpm	Bkg 0.4 cpm	Bkg 2 cpm
Efficiency 33%	Efficiency 33%	Efficiency 17%
MDA 12.9 dpm	MDA 14.8 dpm	MDA 94 dpm
Mfg Eberline	Mfg Eberline	Mfg NeTech
Model BC-4	Model BC-4	Model Electra
Serial # 959	Serial # 833	Serial # 1518
Cal Due 7-19-00	Cal Due 7-14-00	Cal Due 6-29-00
Bkg 40 cpm	Bkg 45 cpm	Bkg 1 cpm
Efficiency 25%	Efficiency 25%	Efficiency 17%
MDA 98.1 dpm	MDA 102.5 dpm	MDA 94 dpm

Survey Type Contamination

Building 707
 Location Roof Exterior Survey Area Z
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204

Date 5-3-00 Time 1630

Comments Roof/Exterior Walls < 2 meters Unbiased survey points

1 m² scans, 1 minute pats and swipes See map for locations

1-25 roof

26-37 wall < 2 meters

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	See Map	0	8	48	16	See Map	3	-36	24
2	See Map	0	4	54	17	See Map	0	12	36
3	See Map	0	-32	36	18	See Map	3	-28	54
4	See Map	3	-28	36	19	See Map	0	-16	30
5	See Map	0	8	42	20	See Map	3	-12	24
6	See Map	0	-16	30	21	See Map	0	-20	36
7	See Map	0	-36	24	22	See Map	0	20	18
8	See Map	3	-16	96	23	See Map	0	-32	42
9	See Map	0	-40	60	24	See Map	0	-20	36
10	See Map	0	20	18	25	See Map	0	-20	66
11	See Map	0	-32	36	26	See Map	9	-20	54
12	See Map	0	-8	54	27	See Map	0	-12	18
13	See Map	0	-20	24	28	See Map	0	-48	48
14	See Map	0	-28	42	29	See Map	0	-12	78
15	See Map	0	24	72	30	See Map	0	-20	66

Date Reviewed. 5-8-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

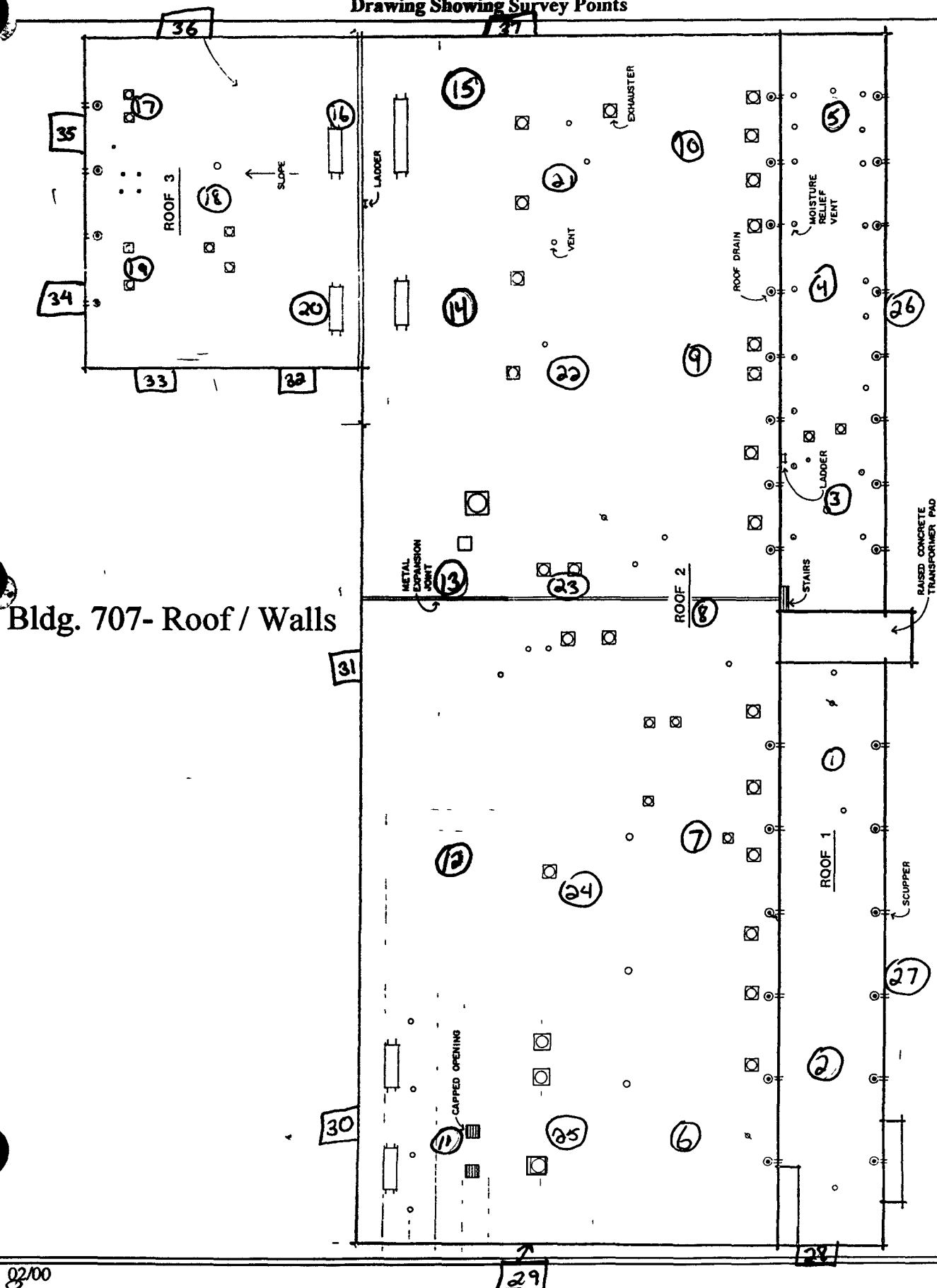
Drawing Showing Survey Points

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	See Map	0	-28	78	61	NA			
32	See Map	3	4	66	62				
33	See Map	0	32	54	63				
34	See Map	0	-32	72	64				
35	See Map	0	28	78	65				
36	See Map	6	-16	72	66				
37	See Map	0	-16	54	67				
38	END OF SURVEY			NA	68				
39					69				
40					70				
41					71				
42					72				
43					73				
44					74				
45					75				
46					76				
47					77				
48					78				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60	NA				90				NA

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



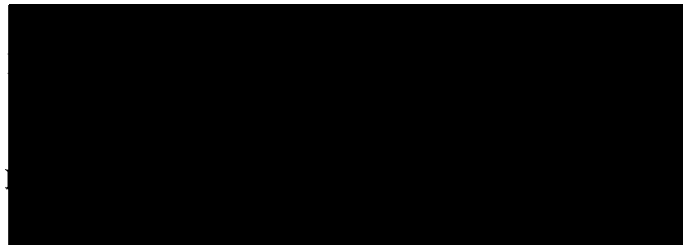
Bldg. 707- Roof / Walls

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>3260</u>
Cal Due <u>7-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>7-17-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.4 cpm</u>	Bkg <u>2 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>12.9 dpm</u>	MDA <u>14.8 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>959</u>	Serial # <u>833</u>	Serial # <u>1518</u>
Cal Due <u>7-19-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.0 cpm</u>	Bkg <u>0.5 cpm</u>	Bkg <u>1 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>17%</u>
MDA <u>98.1 dpm</u>	MDA <u>103.5 dpm</u>	MDA <u>94 dpm</u>

Survey Type Contamination

Building 707
 Location Roof / Exterior Survey Area Z
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 5-3-00 Time 1630

Comments Roof / Exterior Walls Biased survey points
1 m² scans, 1 minute pats and swipes See map for locations

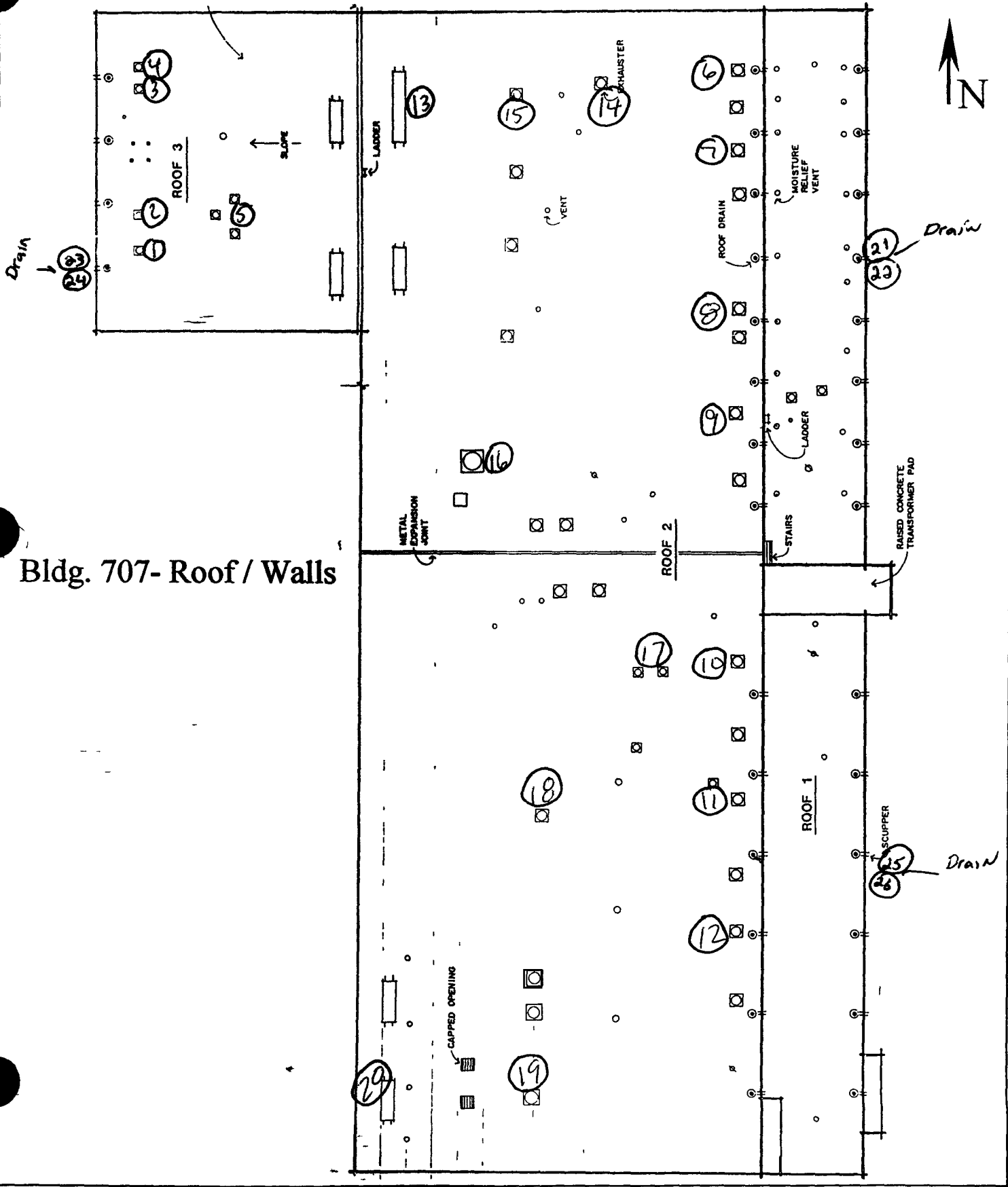
SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	See Map	0	16	162	16	See Map	3	-24	36
2	See Map	0	40	90	17	See Map	0	36	30
3	See Map	3	-4	90	18	See Map	0	-32	60
4	See Map	3	-24	90	19	See Map	0	-4	102
5	See Map	0	56	54	20	See Map	0	-28	36
6	See Map	9	-64	36	21	See Map	0	36	124
7	See Map	0	-8	36	22	See Map	0	4	102
8	See Map	3	-8	42	23	See Map	0	-32	60
9	See Map	3	32	24	24	See Map	3	0	72
10	See Map	0	-36	54	25	See Map	0	-4	18
11	See Map	0	-8	66	26	See Map	3	12	36
12	See Map	0	-24	48	27	END OF SURVEY			VA
13	See Map	0	-16	120	28				
14	See Map	0	-8	18	29				
15	See Map	0	12	84	30	NA			

Date Reviewed. 5-8-00 RS Supervision.

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



Bldg. 707- Roof / Walls

630

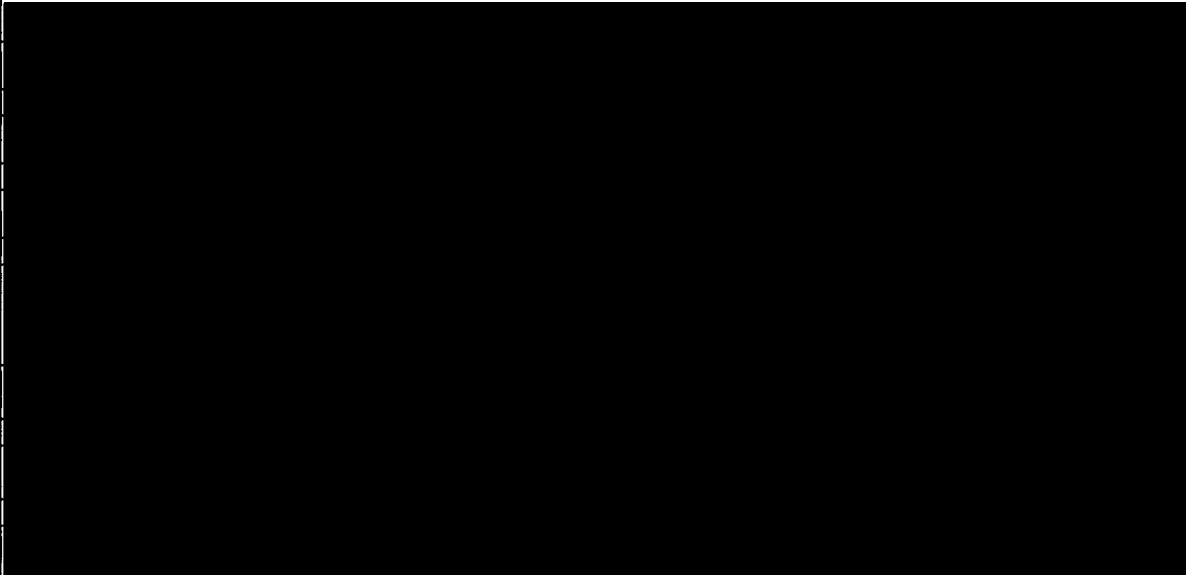
SURVEY PACKAGE TRACKING FORM

[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 708, 708S		Type 1	
Survey Area AA		Survey Unit N/A		Area (m ²) 662	
Survey Unit Description Interior of Building 708 and Building 708S (breathing air compressor on skids)					
Survey Type			Classification		
RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	34	35	2	0	34
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building 708, 708S						
Survey Area: AA	Survey Unit: N/A						
Survey Unit Description: INTERIOR OF BUILDING 708 AND BUILDING 708S (BREATHING AIR COMPRESSOR ON SKIDS)							
Building Information:							
Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/>							
Building Type Type 1 <input checked="" type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input type="checkbox"/>							
Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>							
Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____							
Justification for Classification: N/A							
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads							
Special Safety Precautions: Access to roofs, stairs, or elevated structures external to buildings may require additional approvals from security personnel Verify approvals prior to commencing surveys							
Isolation Controls:							
Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>							
Labeling Requirements: NONE							
Survey Package Implementation: N/A							
							
RESS Manager Printed Name	Employee #	RESS Manager Signature	Date				

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 708, 708S
Survey Area: AA		Survey Unit N/A
Survey Unit Description. Interior of Building 708 and Building 708S (breathing air compressor on skids)		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters 30 <u>unbiased</u> survey points uniformly distributed throughout building 708 ✓</p> <p>4 <u>biased</u> survey points near the drums stored in the center of room (posted as RMA) in Building 708 ✓</p> <p>CEILINGS/WALLS > 2 meters 30 <u>biased</u> surveys as determined by RCT ✓</p> <p>EQUIPMENT 25 <u>biased</u> survey points on equipment within Building 708 as determined by RCT ✓ 10 <u>biased</u> survey points on skid mounted breathing air compressor (Building 708S)</p>	<p>SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 708, 708S
Survey Area: AA		Survey Unit N/A
Survey Unit Description: Interior of Building 708 and Building 708S (breathing air compressor on skids)		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 34 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 2 biased (paint) media samples taken as follows: <ul style="list-style-type: none"> - 1 sample near the posted Radioactive Material Area (RMA) at center of room in Building 708 - 1 sample from random area within building 708 	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Pg. superseded 01/18/00 *Chg #2*

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 708, 708S
Survey Area: AA	Survey Unit: N/A
Survey Unit Description Interior of Building 708 and Building 708S (breathing air compressor on skids)	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For each media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 708, 708S
Survey Area: AA	Survey Unit N/A
Survey Unit Description Interior of Building 708 and Building 708S (breathing air compressor on skids)	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media "</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

Pg suspended 01/18/00 JF Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: AA	Survey Unit N/A
Survey Unit Description . Interior of Building 708 and Building 708S (breathing air compressor on skids)	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i e , non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e g , elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e g , indicate which direction is North) • Other appropriate information (e g , "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc) 	

640

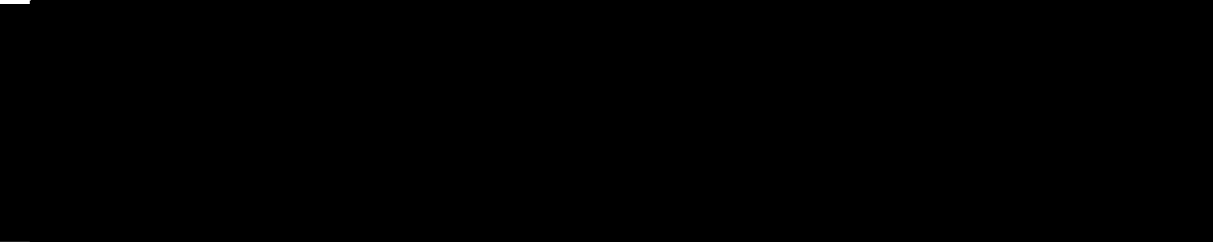
SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building: 707
Survey Area: AA	Survey Unit: N/A
Survey Unit Description. : Interior of Building 708 and Building 708S (breathing air compressor on skids)	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4- Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 708, 708S	
Survey Area: AA		Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion	RCT Supervisor	PRE	
Scan Surveys	<i>S</i>	<i>db</i>	
Total Activity Surveys	<i>S</i>	<i>db</i>	
Exposure Rate Surveys	NA	NA	
Removable Surveys	<i>S</i>	<i>db</i>	
Media Samples	<i>QSD</i>	<i>KDM</i>	
Volumetric Samples	NA	NA	
All Surveys and Samples Accounted For	RCT Supervisor	PRE	
Scan Surveys	<i>S</i>	<i>db</i>	
Total Activity Surveys	<i>S</i>	<i>db</i>	
Exposure Rate Surveys	NA	NA	
Removable Surveys	<i>S</i>	<i>db</i>	
Media Samples	<i>QSD</i>	<i>KDM</i>	
Volumetric Samples	NA	NA	
Comments			
			
RESS Manager Printed Name	Employee #	RESS Manager Signature	Date

Page Superseded R04 4/28/00 Chg # 4

NORTH CAROLINA ENVIRONMENTAL TECHNOLOGY STATE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____
Model _____	Model _____	Model _____	Building: _____
Serial # _____	Serial # _____	Serial # _____	Location* _____
Cal Due _____	Cal Due _____	Cal Due _____	Purpose _____
Bkg. _____	Bkg. _____	Bkg. _____	RWP # _____
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____
Mfg. _____	Mfg. _____	Mfg. _____	Print name _____ Signature _____ Emp # _____
Model _____	Model _____	Model _____	RCT _____ / _____ / _____
Serial # _____	Serial # _____	Serial # _____	Print name _____ Signature _____ Emp # _____
Cal Due _____	Cal Due _____	Cal Due _____	
Bkg _____	Bkg _____	Bkg _____	
Efficiency _____	Efficiency _____	Efficiency _____	
MDA _____	MDA _____	MDA _____	

PRL #: _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1 _____	_____	_____	_____	26 _____	_____	_____	_____
2 _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33 _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

Date Reviewed: _____

RS Supervision: _____

Print Name _____

Signature _____

Emp # _____

644

365/466

ENVIRONMENTAL TECHNOLOGY SIDE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE

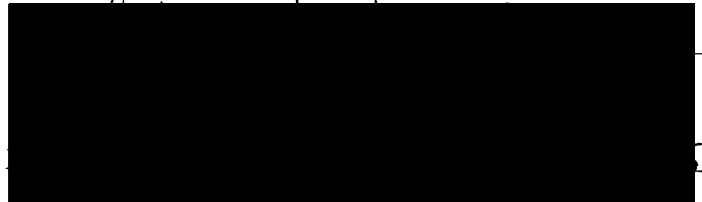
SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07 02,
Contamination Monitoring Requirements

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1270</u>	Serial # <u>3260</u>
Cal Due <u>8-15-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>7-17-00</u>
Bkg <u>0.1</u>	Bkg <u>0.0</u>	Bkg <u>3.0</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>.20</u>
MDA <u>11.5</u>	MDA <u>82</u>	MDA <u>94</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NE</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>2307</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>7-12-00</u>
Bkg <u>43</u>	Bkg <u>40</u>	Bkg <u>2.0</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>.194</u>
MDA <u>101.3</u>	MDA <u>98.1</u>	MDA <u>94</u>

Survey Type Contamination

Building 707, 708
 Location _____ Survey Area AA
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 3-24, 3-30-00 Time Days

Comments Floor / Walls < 2 meters Unbiased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Floor	0	12	12	16	Floor	0	28	24
2	Floor	0	16	36	17	Floor	0	-48	0
3	Floor	0	-16	30	18	Floor	0	68	12
4	Floor	3	40	12	19	Floor	0	-20	36
5	Floor	6	4	0	20	Floor	3	24	30
6	Floor	0	28	12	21	Floor	0	-12	66
7	Floor	0	-20	36	22	Floor	0	-24	24
8	Floor	0	4	12	23	WALL < 2m	0	-8	24
9	Floor	0	-12	18	24	WALL < 2m	0	24	18
10	Floor	0	-24	18	25	WALL < 2m	3	-44	48
11	Floor	0	8	0	26	WALL < 2m	0	48	42
12	Floor	3	4	12	27	WALL < 2m	0	-28	36
13	Floor	0	24	24	28	WALL < 2m	0	20	36
14	Floor	0	12	12	29	WALL < 2m	0	36	24
15	Floor	0	-32	12	30	WALL < 2m	0	44	66

Date Reviewed 4-7-00 RS Supervision

Print Name

Signature

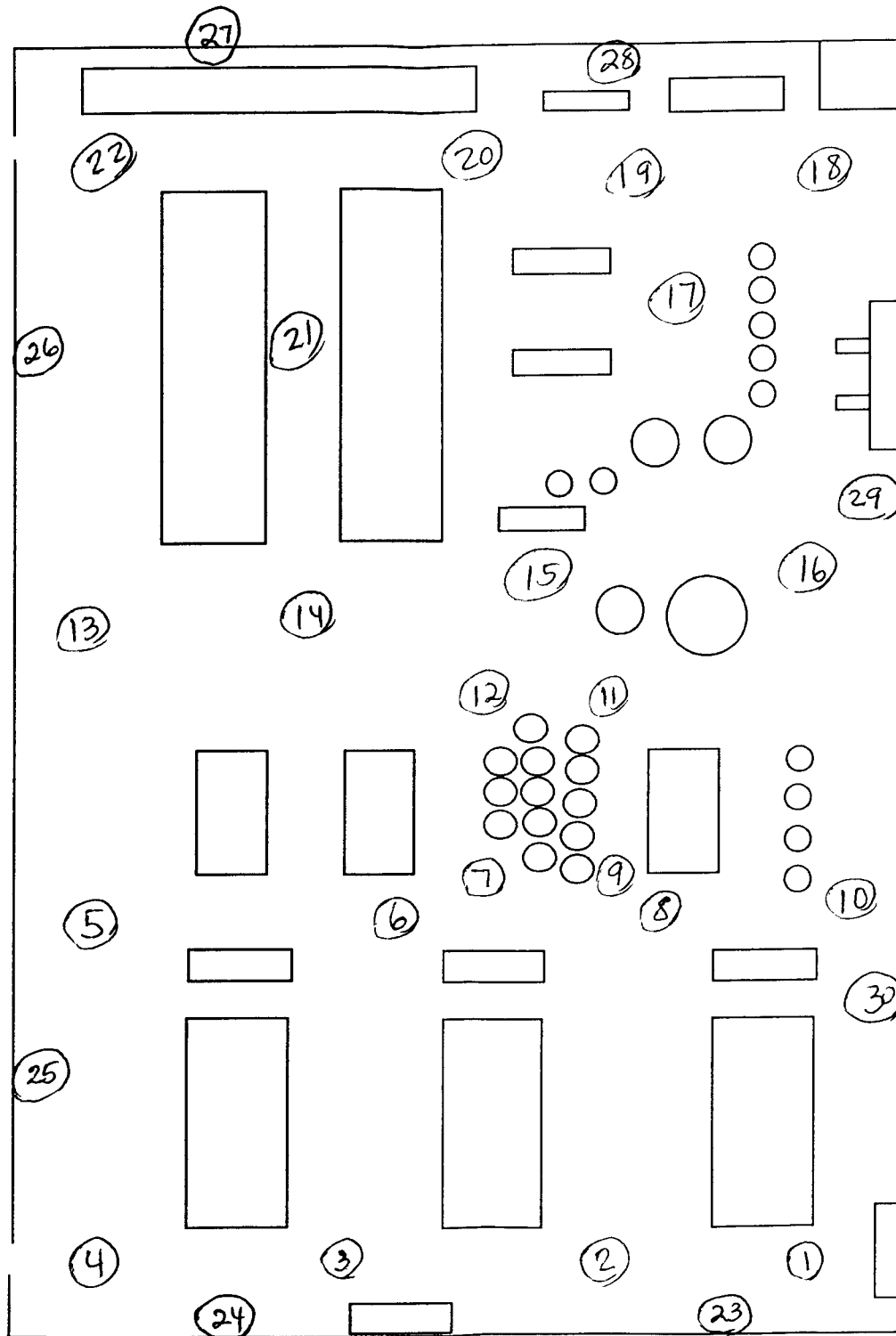
Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

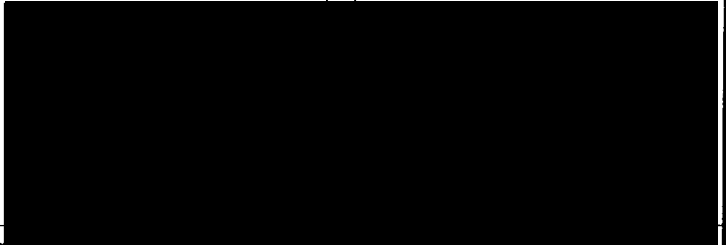
Drawing Showing Survey Points

BUILDING 708



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA****Survey Type Contamination**

Building 708
 Location _____ Survey Area AA
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 4-4-00 Time DAYS

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1270</u>	Serial # <u>1233</u>
Cal Due <u>8-15 00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>5-11 00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.0 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>2063</u>
MDA <u>115 dpm</u>	MDA <u>82 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg _____
Model <u>BC-4</u>	Model <u>BC-4</u>	Model _____
Serial # <u>872</u>	Serial # <u>833</u>	Serial # _____
Cal Due <u>4-12-00</u>	Cal Due <u>7-14 00</u>	Cal Due _____
Bkg <u>41 cpm</u>	Bkg <u>38 cpm</u>	Bkg _____
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency _____
MDA <u>992 dpm</u>	MDA <u>95.9 dpm</u>	MDA _____

Comments Floor / Walls < 2 meters Biased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Total Beta	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Total Beta
		Alpha	Beta					Alpha	Beta		
1	FLOOR	0	-20	6	N/A	16					
2	FLOOR	0	12	12	N/A	17					
3	FLOOR	0	-8	0	N/A	18					
4	FLOOR	0	76	6	N/A	19					
5						20					
6						21					
7						22					
8						23					
9						24					
10						25					
11						26					
12						27					
13						28					
14						29					
15											

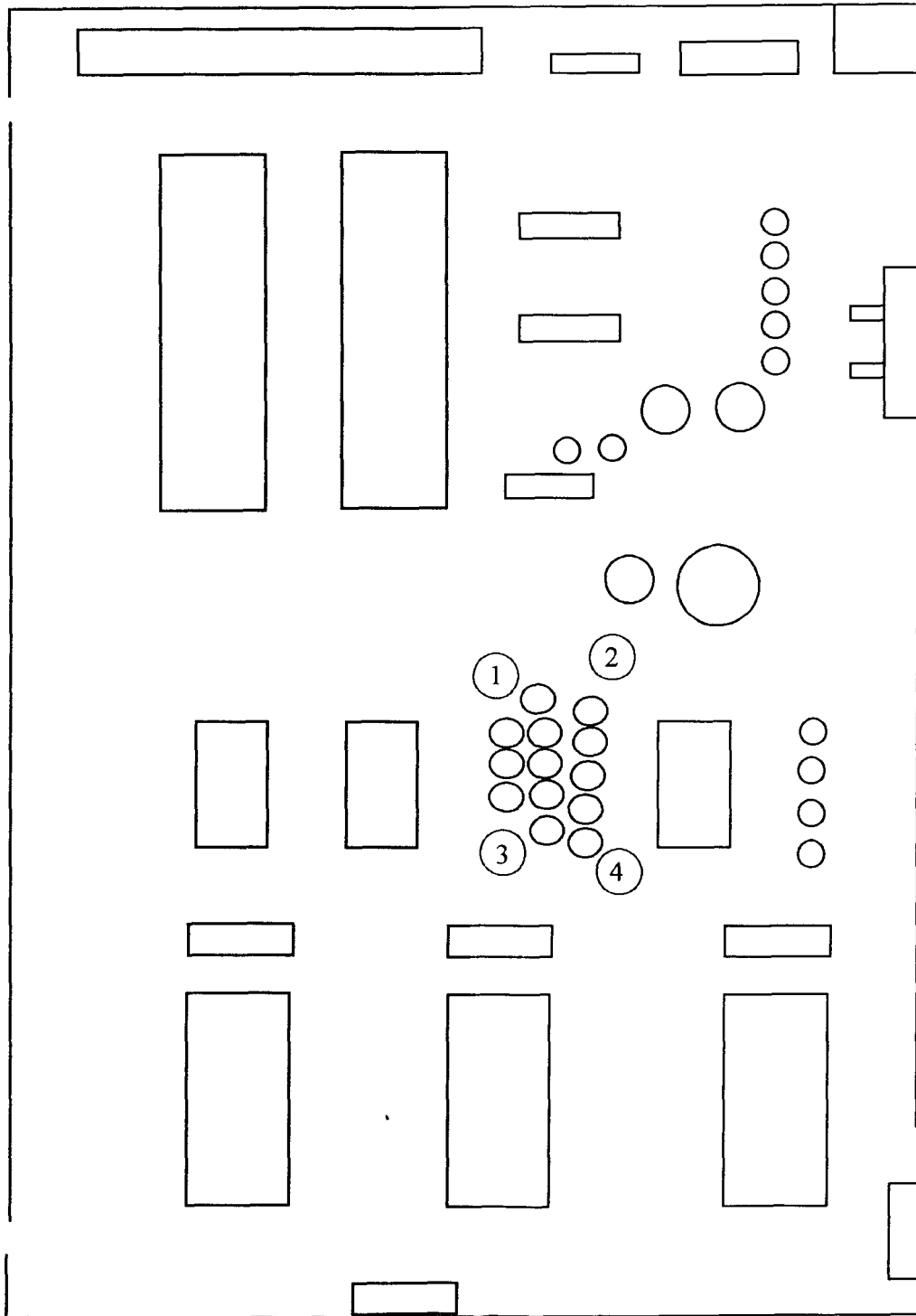
Date Reviewed. 4-6-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

BUILDING 708



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1270</u>	Serial # <u>1233</u>
Cal Due <u>8-15-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.0 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20%</u>
MDA <u>11.5 dpm</u>	MDA <u>8.6 dpm</u>	MDA <u>9.4 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u></u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u></u>
Bkg <u>4.1 cpm</u>	Bkg <u>3.8 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>99.2 dpm</u>	MDA <u>95.9 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 708

Location Survey Area AA

Purpose Reconnaissance Level Characterization

RWP # 00707 1204

Date 4-4-00 Time Days

Comments Ceiling / Walls > 2 meters Biased survey points

1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	<u>5) 4-400 Ceiling WALLS > 2M</u>	0	4	16	16	<u>WALLS > 2M Ceiling 4-400</u>	0	32	24
2		0	0	30	17		0	20	34
3		0	-16	18	18		0	-64	0
4		0	44	30	19		0	52	12
5		3	-12	36	20		0	4	24
6		0	-16	12	21		0	44	36
7		0	12	6	22		3	4	42
8		0	16	42	23		0	24	16
9		3	36	18	24		3	24	12
10		3	-8	6	25		0	-40	18
11		0	12	24	26	<u>Ceiling</u>	0	-8	12
12		0	-4	18	27	<u>"</u>	0	-20	18
13		0	-16	12	28	<u>"</u>	3	0	24
14		0	26	30	29	<u>"</u>	3	-8	30
15		0	36	24	30	<u>"</u>	0	-12	12

Date Reviewed 4-6-00 RS Supervision.

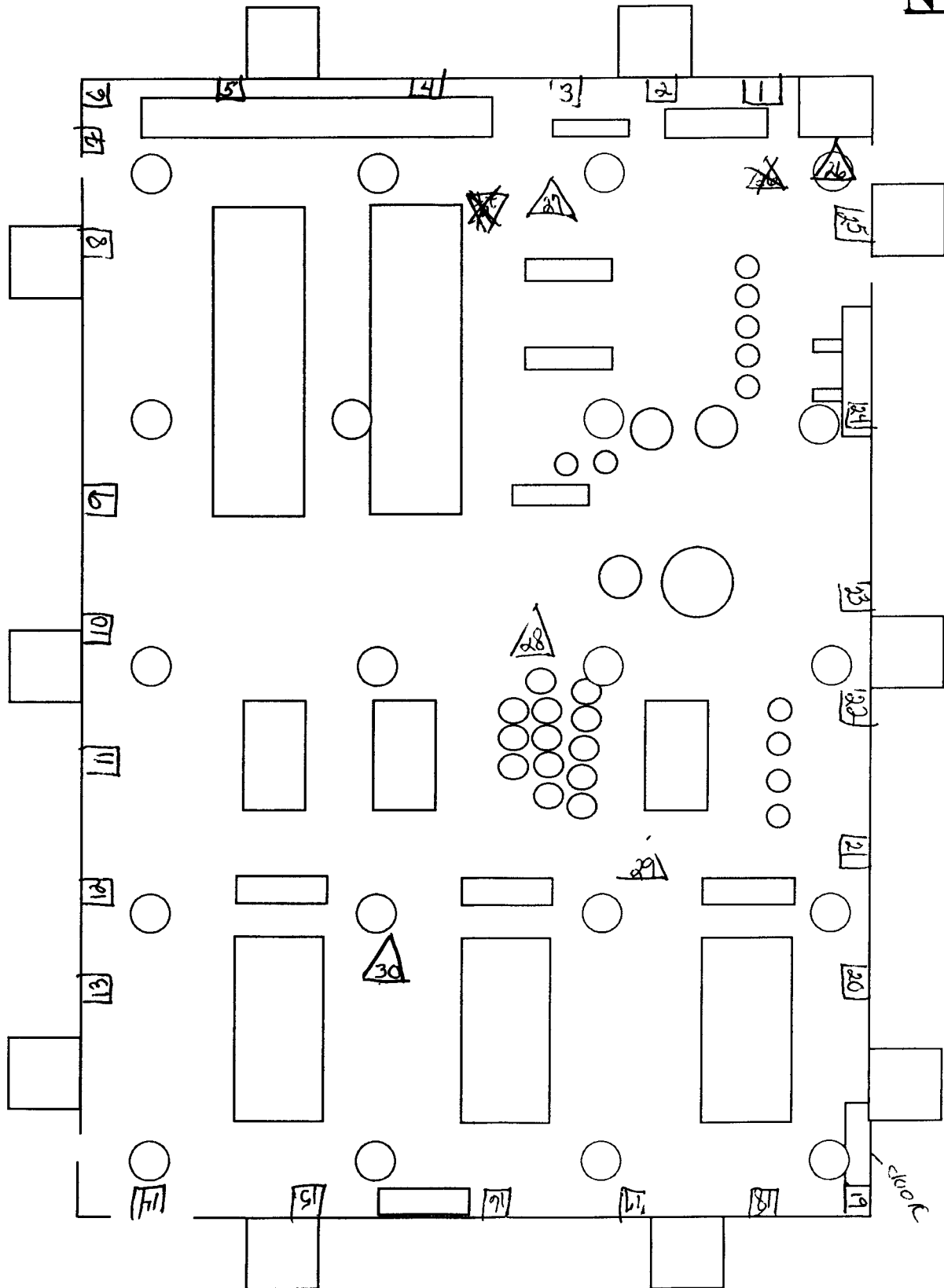
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

2.8.2

Drawing Showing Survey Points

BUILDING 708



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA****Survey Type Contamination**Building **708**Location **Survey Area AA**Purpose **Reconnaissance Level Characterization**RWP # **00-707-1204**Date **4/3/00** Time **Days**

R

R

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1270</u>	Serial # <u>1518</u>
Cal Due <u>8-15-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>6-24-00</u>
Bkg <u>0.0 cpm</u>	Bkg <u>0.0 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>2186</u>
MDA <u>8.2 dpm</u>	MDA <u>8.2 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NE</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>ELECTRA</u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>2307</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>7-12-00</u>
Bkg <u>37 dpm</u>	Bkg <u>39 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>197</u>
MDA <u>94.8 dpm</u>	MDA <u>97.0 dpm</u>	MDA <u>94 dpm</u>

Comments Equipment Biased survey points1 minute pats and swipes See map for locations10 pts Biased B708S not performed - equipment has been removed from site.**SURVEY RESULTS**

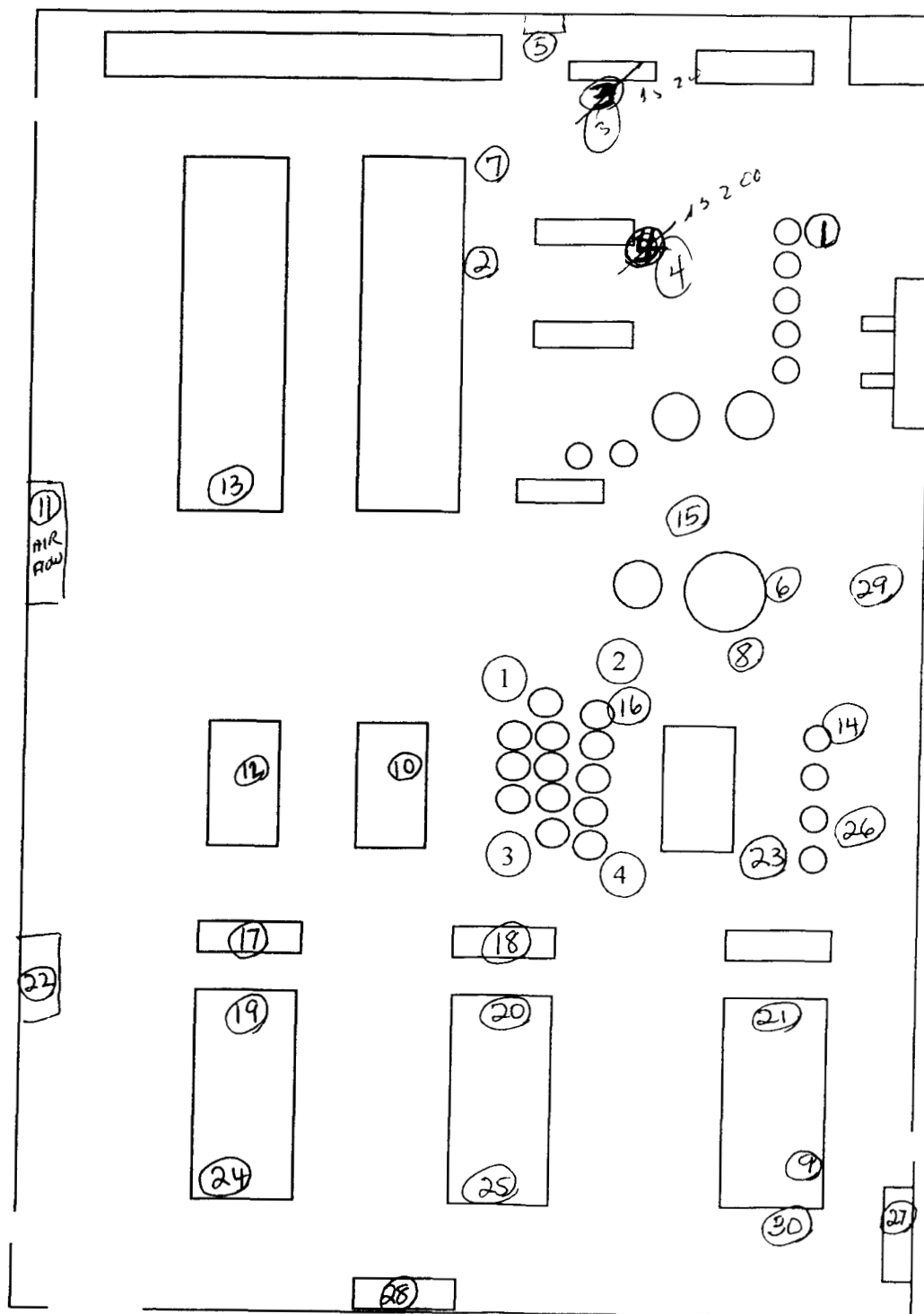
Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	PUMP P-74B	0	20	12	16	TANK #0650	0	32	6
2	TANK 455-756	0	24	0	17	MOTOR 330-236	0	40	12
3	Compressor 39411-820	0	20	18	18	MOTOR 330-237	0	-20	12
4	Electrical Panel	0	24	0	19	TANK # 0667	0	36	18
5	Electrical Box	0	36	18	20	TANK # 0665	12	0	36
6	TANK # 0637	3	-36	96	21	TANK # 0663	0	48	18
7	Generator Panel	0	44	6	22	TABLE	3	-12	12
8	TANK # 0638	0	-12	36	23	SUPPLY VALVE	0	64	6
9	Generator	0	20	18	24	TANK	0	36	18
10	PA-AC-3 #321307	0	32	18	25	TANK	0	40	18
11	AIR Flow	0	24	6	26	VALVE 708-PA V-4	9	-20	12
12	AIR Compressor 321261	0	-28	0	27	TANK FUEL filter	0	24	18
13	TANK # 0656	0	4	12	28	SUPPORT	0	0	12
14	TANK # 0642	3	48	18	29	Sanitary drain	0	16	42
15	TANK # 0635	3	32						

Date Reviewed 4-6-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

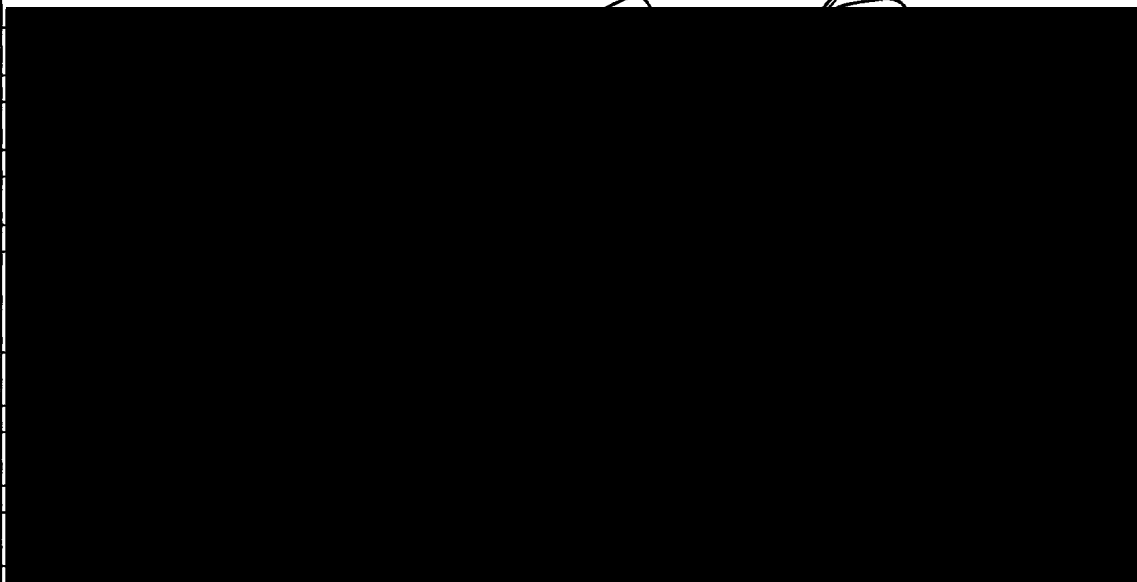
BUILDING 708
(EQUIPMENT)

[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 708 (EXT /ROOF)		Type 1	
Survey Area BB		Survey Unit N/A		Area (m ²) per building	
Survey Unit Description External surfaces/roof of building 708					
Survey Type			Classification		
RLC Survey X FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	24	0	1	0	54
Building		Type.		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 708 (EXTERIOR/ROOF)
Survey Area: BB	Survey Unit: N/A
Survey Unit Description: EXTERNAL SURFACES/ROOF OF BUILDING 708	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input checked="" type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to roofs, stairs, or elevated structures external to buildings may require additional approvals from security personnel Verify approvals prior to commencing surveys	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation: N/A	
	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building. 708 (EXTERIOR/ROOF)
Survey Area. BB		Survey Unit N/A
Survey Unit Description: External surfaces/roof of building 708		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	ROOF/EXTERIOR WALLS < 2 meters 30 unbiased survey points uniformly distributed over roof/exterior, as follows <ul style="list-style-type: none"> - 3 survey points per each exterior wall around building (12 points total) - 18 survey points on roof/lip 24 biased survey points <ul style="list-style-type: none"> - 2 survey points <u>each</u> of 2 different roof drains/downspouts on /near ground level (4 points total) - 20 survey points distributed among the following locations roof exhaust vents/duct work and capped roof openings 	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building. 708
Survey Area: BB		Survey Unit N/A
Survey Unit Description: External surfaces/roof of building 708		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	ROOF/EXTERIOR WALLS < 2 meters 54 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted.	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 1 biased roof material samples taken as follows - One sample taken on North half of roof	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

By *supervised* 01/18/00 *Chg #2*

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 708
Survey Area: BB	Survey Unit N/A
Survey Unit Description: External surfaces/roof of building 708	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For each media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 708
Survey Area: BB	Survey Unit N/A
Survey Unit Description. External surfaces/roof of building 708	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media "</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

6660

By superseded 01/18/00 JG Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: BB	Survey Unit N/A
Survey Unit Description: : External surfaces/roof of building 708	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: BB	Survey Unit N/A
Survey Unit Description: : External surfaces/roof of building 708	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

[illegible]

Page Superseded RSM 4/28/00 Chg # 4

RADIATION MONITORING INITIAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____
Model _____	Model _____	Model _____	Building _____
Serial # _____	Serial # _____	Serial # _____	Location* _____
Cal Due _____	Cal Due _____	Cal Due _____	Purpose: _____
Bkg. _____	Bkg. _____	Bkg. _____	RWP # _____
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____
Mfg. _____	Mfg. _____	Mfg. _____	Print name _____ Signature _____ Emp # _____
Model _____	Model _____	Model _____	RCT _____ / _____ / _____
Serial # _____	Serial # _____	Serial # _____	Print name _____ Signature _____ Emp # _____
Cal Due _____	Cal Due _____	Cal Due _____	
Bkg. _____	Bkg. _____	Bkg. _____	
Efficiency _____	Efficiency _____	Efficiency _____	
MDA _____	MDA _____	MDA _____	

PRL #: _____

Comments. _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1				26			
2				27			
3				28			
4				29			
5				30			
6				31			
7				32			
8				33			
9				34			
10				35			
11				36			
12				37			
13				38			
14				39			
15				40			
16				41			
17				42			
18				43			
19				44			
20				45			
21				46			
22				47			
23				48			
24				49			
25				50			

Date Reviewed: _____

RS Supervision: _____

Print Name

Signature

Emp #

374/466

ENVIRONMENTAL TECHNOLOGY NOTE

RADIOLOGICAL SAFETY

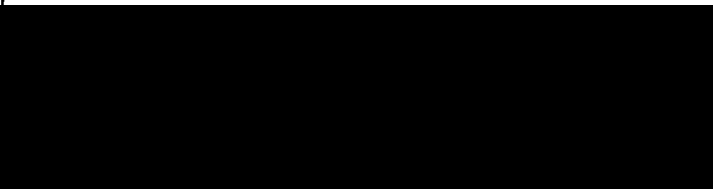
Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE.

**SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02,
*Contamination Monitoring Requirements***

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA****Survey Type Contamination**

Building 708
 Location Exterior / Roof Survey Area BB
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 4-20-00 Time 1630

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>3260</u>
Cal Due <u>8-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>7-17-00</u>
Bkg <u>0.0 cpm</u>	Bkg <u>0.4 cpm</u>	Bkg <u>5 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>82 dpm</u>	MDA <u>148 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>959</u>	Serial # <u>833</u>	Serial # <u>2307</u>
Cal Due <u>7-19-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>7-12-00</u>
Bkg <u>38 cpm</u>	Bkg <u>46.0 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>17%</u>
MDA <u>959 dpm</u>	MDA <u>104.5 dpm</u>	MDA <u>94 dpm</u>

Comments Roof / Exterior Walls < 2 meters Unbiased survey points1 m² scans, 1 minute pats and swipes See map for locations30 - inside High Voltage area could not get**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Roof	0	16	60	16	Roof	0	0	54
2	Roof	0	16	72	17	Roof	0	16	42
3	Roof	0	20	66	18	Roof	3	24	54
4	Roof	0	4	54	19	Wall	0	-40	42
5	Roof	3	16	48	20	Wall	3	-36	84
6	Roof	0	-24	78	21	Wall	0	32	54
7	Roof	0	4	42	22	Wall	3	-36	24
8	Roof	3	-36	60	23	Wall	0	-40	24
9	Roof	0	-12	60	24	Wall	0	-36	30
10	Roof	0	16	72	25	Wall	3	-40	30
11	Roof	0	0	108	26	Wall	0	-72	66
12	Roof	3	-56	78	27	Wall	0	4	36
13	Roof	0	-40	54	28	Wall	0	-52	18
14	Roof	0	-20	48	29	Wall	0	4	78
15	Roof	0	-16	48	30	see note			

Date Reviewed: 4-26-00 RS Supervision

Print Name

Signature

Emp #

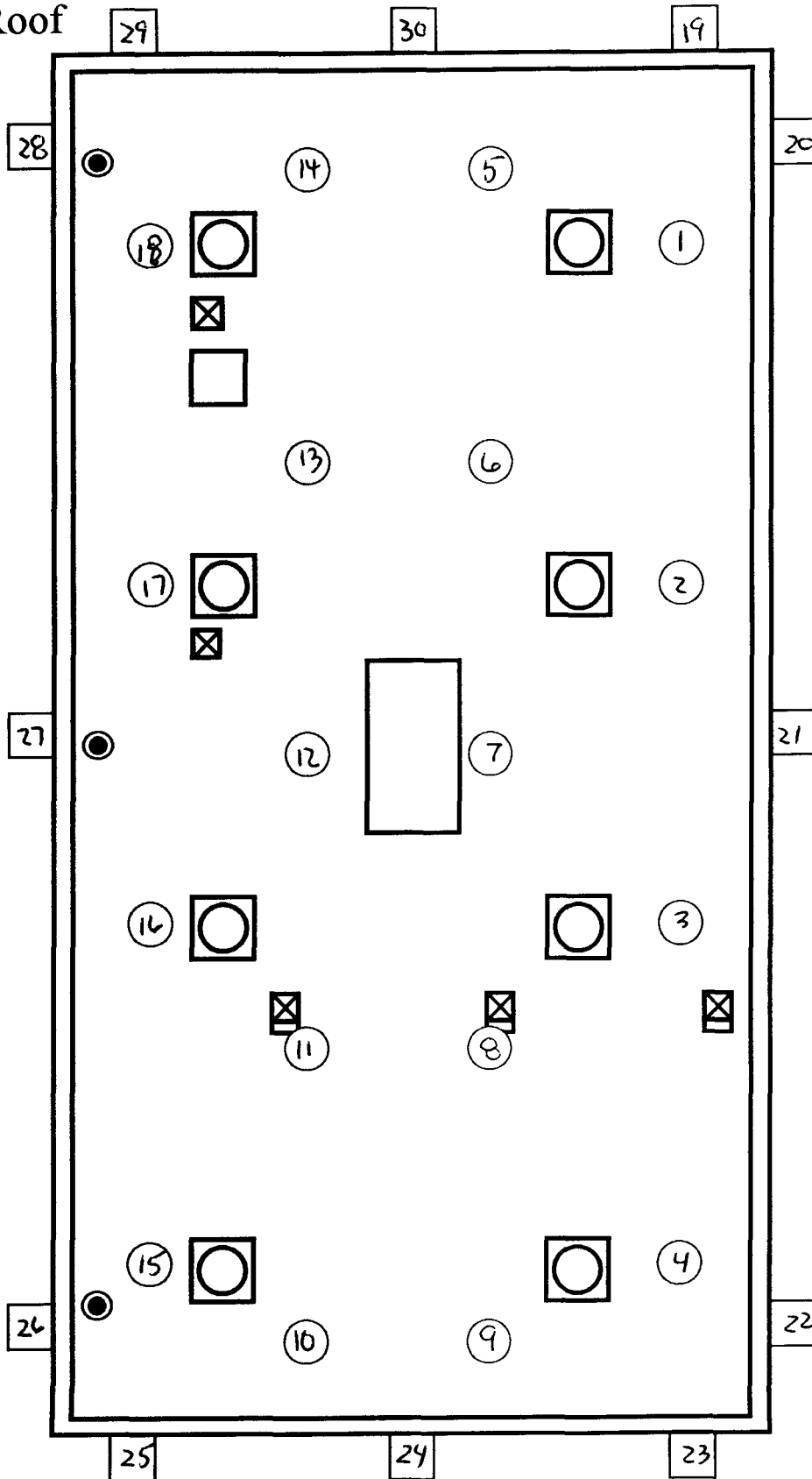
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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

BLDG 708 Roof



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA****Survey Type Contamination**

Building 708
 Location External Surfaces Survey Area B3
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 4-20-00 Time 1630

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>3260</u>
Cal Due <u>8-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>7-17-00</u>
Bkg <u>00 cpm</u>	Bkg <u>04 cpm</u>	Bkg <u>5 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>82 cpm</u>	MDA <u>148 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>959</u>	Serial # <u>833</u>	Serial # <u>2307</u>
Cal Due <u>7-17-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>7-12-00</u>
Bkg <u>38 cpm</u>	Bkg <u>46 cpm</u>	Bkg <u>20 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>17%</u>
MDA <u>959 dpm</u>	MDA <u>1045 dpm</u>	MDA <u>94 dpm</u>

Comments Roof / Exterior Walls Biased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1		0	-4	72	16		0	-12	54
2		6	-28	30	17		6	20	168
3		0	-20	30	18		0	48	24
4		3	0	60	19		0	4	180
5		3	-48	24	20		0	-24	48
6		3	-8	24	21		0	8	102
7		0	-40	48	22		0	-24	60
8		15	-32	48	23		0	-8	108
9		0	8	48	24		0	-4	54
10		0	20	48	25	END OF SURVEY			
11		0	-12	48	26				
12		1	-44	134	27				
13		6	8	72	28				
14		0	24	30	29				
15		3	-8	222	30				

Date Reviewed 4-26-00 RS Supervision

Print Name

Signature

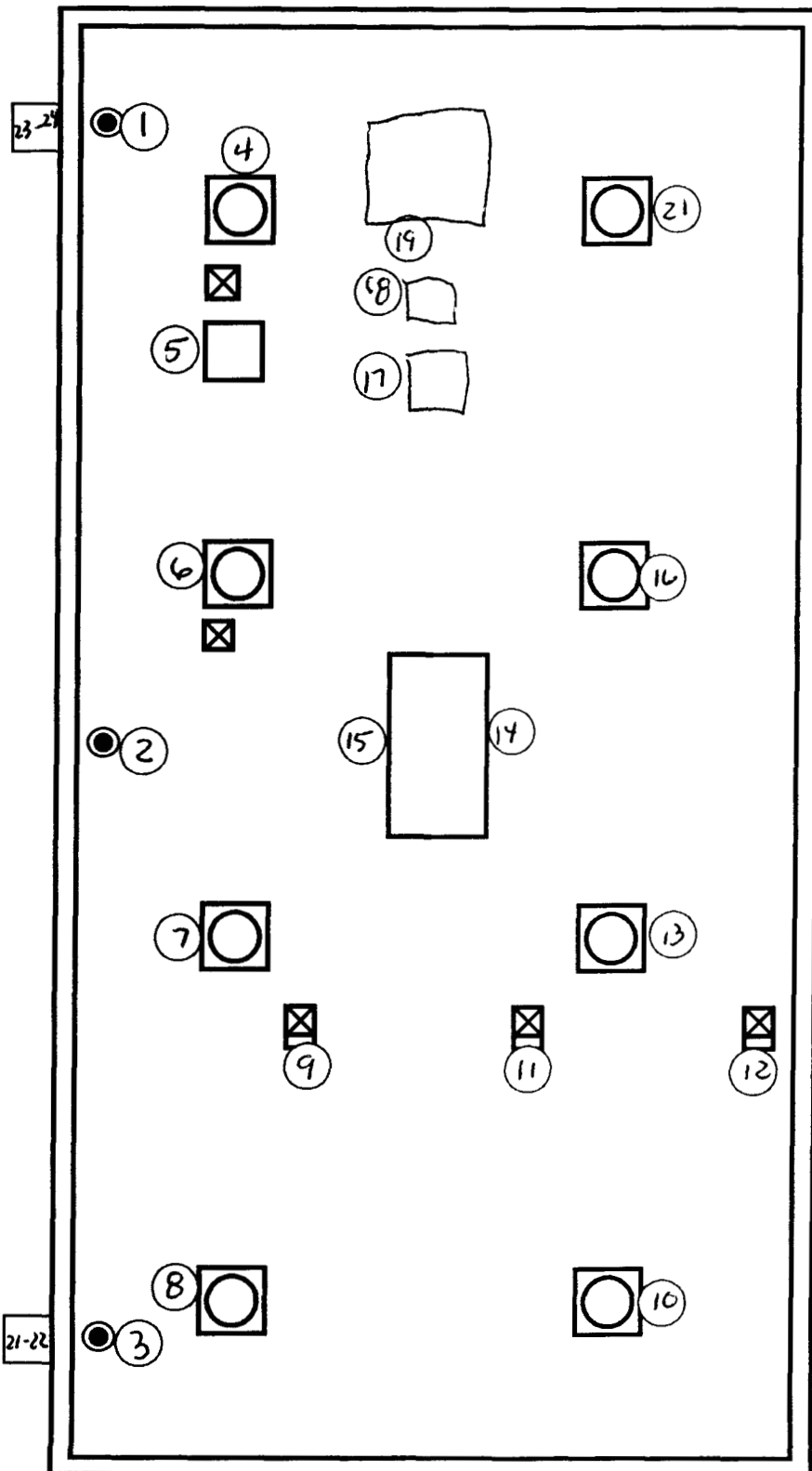
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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

BLDG 708 Roof



SURVEY PACKAGE TRACKING FORM

[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 731		Type 2	
Survey Area CC		Survey Unit N/A		Area (m ²) ~47	
Survey Unit Description INSIDE OF BUILDING 731					
Survey Type			Classification		
RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	22	30	1	0	42
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					

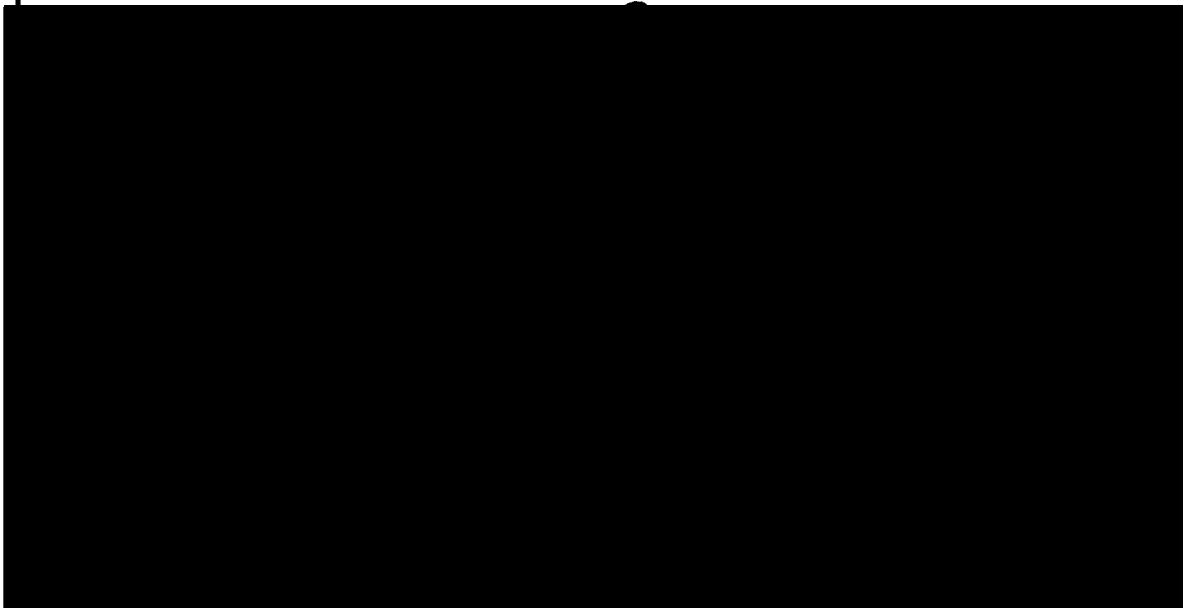
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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002			Building 731		Type 2	
Survey Area CC			Survey Unit N/A		Area (m ²) ~47	
Survey Unit Description INSIDE OF BUILDING 731						
Survey Type RLC Survey X <input checked="" type="checkbox"/> FSS <input type="checkbox"/>				Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
30	42	30	1	0	42	
Building		Type		Survey Area		
Survey Unit			Area (m ²)			
Survey Unit Description						
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>				Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building		Type		Survey Area		
Survey Unit			Area (m ²)			
Survey Unit Description						
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>				Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building		Type		Survey Area		
Survey Unit			Area (m ²)			
Survey Unit Description						
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>				Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building		Type		Survey Area		
Survey Unit			Area (m ²)			
Survey Unit Description						
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>				Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building		Type		Survey Area		
Survey Unit			Area (m ²)			
Survey Unit Description						

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 731
Survey Area: CC	Survey Unit: N/A
Survey Unit Description: Inside of building 731	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input checked="" type="checkbox"/> Type 3 <input type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder and/or remote reach tools and instrumentation may be required for access to walls/ceilings Additional lighting necessary inside of Building 731	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation: N/A	



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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building: 731
Survey Area: CC		Survey Unit: N/A
Survey Unit Description: INSIDE OF BUILDING 731		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>30 <u>unbiased</u> survey points uniformly distributed throughout inside of building (15 on walls, 15 on floors)</p> <p>12 <u>biased</u> survey points at the following locations</p> <ul style="list-style-type: none"> - 2 points beneath each of tanks 651, 652, and 101 (6 points total) - 6 points beneath piping/pumps/valves <p>CEILINGS/WALLS > 2 meters</p> <p>10 <u>biased</u> surveys (divided evenly between wall and ceiling where possible) with focus on following areas</p> <ul style="list-style-type: none"> - Walls behind process/liquid lines - Stained or discolored areas - Areas around pipe or other penetrations <p>EQUIPMENT</p> <p>30 <u>biased</u> survey points on equipment with focus on</p> <ul style="list-style-type: none"> - Tanks - Piping/pumps associated with tanks - Ventilation exhaust ducts - On top of overhead piping (where locations are accessible through reach tools/ladders) 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

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Page Superseded by 4/28/00 Change #5

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID. 99-0002		Building 731
Survey Area: CC		Survey Unit N/A
Survey Unit Description: INSIDE OF BUILDING 731		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>30 <u>unbiased</u> survey points uniformly distributed throughout inside of building (15 on walls, 15 on floors)</p> <p>12 <u>biased</u> survey points at the following locations</p> <ul style="list-style-type: none"> - 2 points beneath <u>each</u> of tanks 651, 652, and 101 (6 points total) - 6 points beneath piping/pumps/valves <p>CEILINGS/WALLS > 2 meters</p> <p>30 <u>biased</u> surveys (divided evenly between wall and ceiling where possible) with focus on following areas</p> <ul style="list-style-type: none"> - Walls behind process/liquid lines - Stained or discolored areas - Areas around pipe or other penetrations <p>EQUIPMENT</p> <p>30 <u>biased</u> survey points on equipment with focus on</p> <ul style="list-style-type: none"> - Tanks - Piping/pumps associated with tanks - Ventilation exhaust ducts - On top of overhead piping (where locations are accessible through reach tools/ladders) 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707
Survey Area: CC		Survey Unit N/A
Survey Unit Description: INSIDE OF BUILDING 731		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 42 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations above the DCGL are to be documented. CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 1 biased (paint) media samples taken as follows - 1 sample on floor in lower level of building**	SEE NOTE 5 **Media sample may not be possible at this location due to floor coating configuration. Skip sample if sampling not feasible.
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Superseded 01/18/00
Chy #2

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: CC	Survey Unit N/A
Survey Unit Description: INSIDE OF BUILDING 731	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures. • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: CC	Survey Unit N/A
Survey Unit Description: INSIDE OF BUILDING 731	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

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Pg superseded 01/18/00 JF Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: CC	Survey Unit N/A
Survey Unit Description: INSIDE OF BUILDING 731	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: CC	Survey Unit: N/A
Survey Unit Description: : INSIDE OF BUILDING 731	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

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SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 731
Survey Area: CC		Survey Unit N/A
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>		
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	<i>[Signature]</i>	KDM
Total Activity Surveys	<i>[Signature]</i>	KDM
Exposure Rate Surveys	NA	NA
Removable Surveys	<i>[Signature]</i>	KDM
Media Samples	<i>[Signature]</i>	KDM
Volumetric Samples	NA	NA
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	<i>[Signature]</i>	KDM
Total Activity Surveys	<i>[Signature]</i>	KDM
Exposure Rate Surveys	NA	NA
Removable Surveys	<i>[Signature]</i>	KDM
Media Samples	<i>[Signature]</i>	KDM
Volumetric Samples	NA	NA
Comments		

Page Superseded by 5/9/00 Change #6

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____
Model _____	Model _____	Model _____	Building _____
Serial # _____	Serial # _____	Serial # _____	Location* _____
Cal Due _____	Cal Due _____	Cal Due _____	Purpose _____
Bkg _____	Bkg. _____	Bkg _____	RWP # _____
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____
Mfg _____	Mfg _____	Mfg _____	Print name _____ Signature _____ Emp # _____
Model _____	Model _____	Model _____	RCT _____ / _____ / _____
Serial # _____	Serial # _____	Serial # _____	Print name _____ Signature _____ Emp # _____
Cal Due _____	Cal Due _____	Cal Due _____	
Bkg _____	Bkg. _____	Bkg _____	
Efficiency _____	Efficiency _____	Efficiency _____	
MDA _____	MDA _____	MDA _____	

PRL #: _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1 _____	_____	_____	_____	26 _____	_____	_____	_____
2 _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33 _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

Date Reviewed: _____

RS Supervision: _____

Print Name _____

Signature _____

Emp # _____

684

383 / 466

ENVIRONMENTAL TECHNOLOGY SOLUTIONS

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE.

**SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07 02,
*Contamination Monitoring Requirements***

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA****Survey Type Contamination**

Building 731
 Location Pit Survey Area CC
 Purpose Reconnaissance Level Characterization

RWP # _____

Date 4-12-00 Time 1500

RCT NA _____
 Print name / Signature / Emp #

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1270</u>	Serial # <u>2307</u>
Cal Due <u>8-15-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>7-12-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>19.40%</u>
MDA <u>129 dpm</u>	MDA <u>115 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NA</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>NA</u>
Serial # <u>833</u>	Serial # <u>872</u>	Serial # <u>NA</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>NA</u>
Bkg <u>42 cpm</u>	Bkg <u>42 cpm</u>	Bkg <u>NA</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>NA</u>
MDA <u>100.3 dpm</u>	MDA <u>100.3 dpm</u>	MDA <u>NA</u>

Comments Floor / Walls < 2 meters Unbiased survey points
1 m² scans, 1 minute pats and swipes See map for locations

28 - wiped down and contained.**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F	0	-12	12	16	W	0	40	30
2	F	3	32	60	17	W	0	-8	30
3	F	0	20	60	18	W	3	-36	24
4	F	0	32	84	19	W	0	-28	30
5	F	9	0	30	20	W	0	44	36
6	F	9	-36	48	21	W	0	24	48
7	F	0	-8	48	22	W	216	12	3000
8	F	0	24	162	23	W	3	-40	60
9	F	0	24	24	24	W	0	48	36
10	F	0	12	60	25	W	0	40	30
11	F	0	0	48	26	W	0	24	24
12	F	27	0	1620	27	W	0	-8	48
13	F	0	32	54	28	W	204	48	30600
14	F	0	24	54	29	W	0	20	30
15	F	0	24	240	30	W	3	36	30

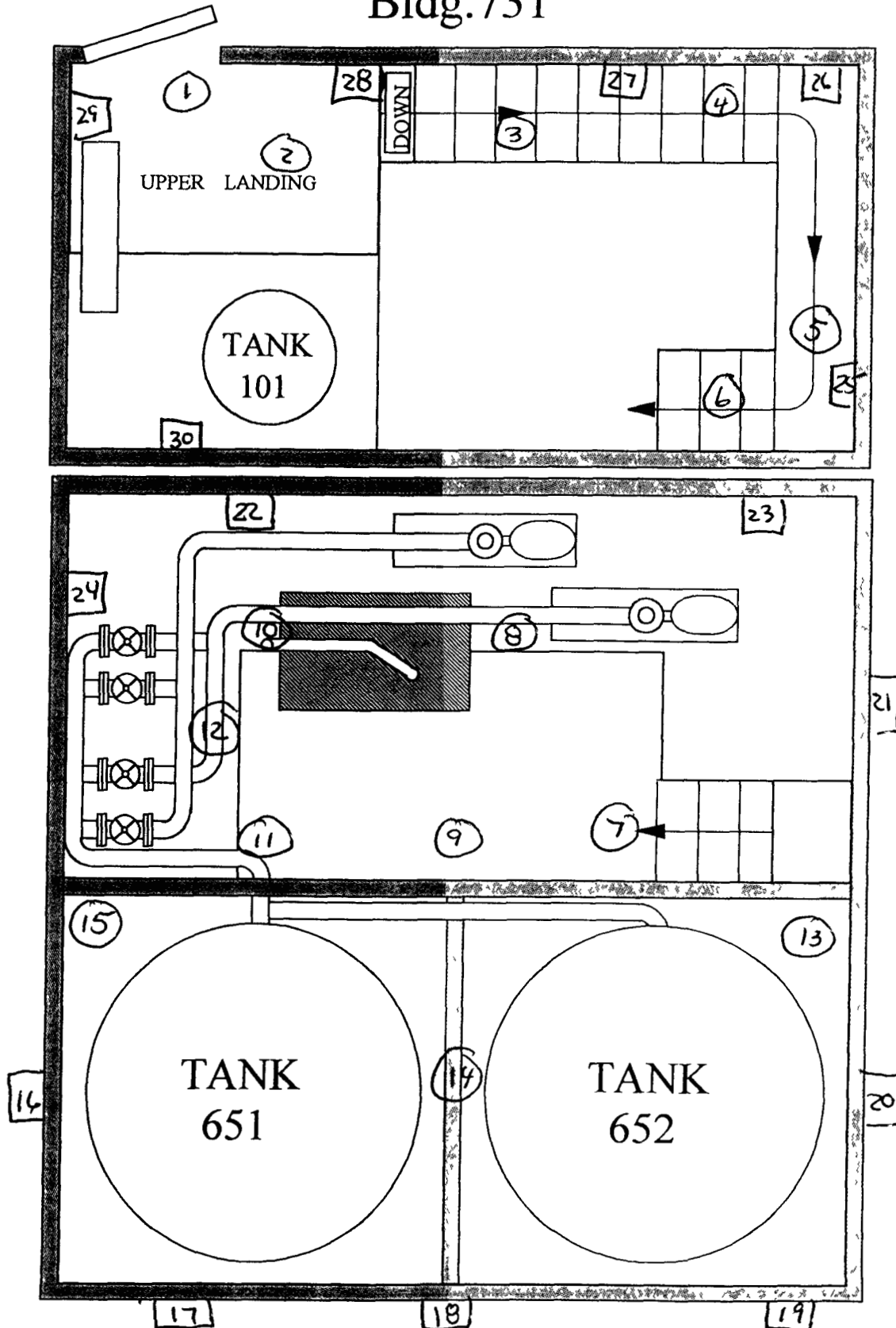
Date Reviewed. 5-8-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Bldg. 731



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1270</u>	Serial # <u>2307</u>
Cal Due <u>8-15-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>7-12-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.1 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>19.40%</u>
MDA <u>12.9 dpm</u>	MDA <u>11.5 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NA</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>NA</u>
Serial # <u>833</u>	Serial # <u>872</u>	Serial # <u>NA</u>
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>NA</u>
Bkg <u>42 cpm</u>	Bkg <u>42 cpm</u>	Bkg <u>NA</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>NA</u>
MDA <u>100.3 dpm</u>	MDA <u>100.3 dpm</u>	MDA <u>NA</u>

Survey Type Contamination

Building 731
 Location Pit Survey Area CC
 Purpose Reconnaissance Level Characterization

RWP # _____

Date 4-12-00 Time 1600

RCT NA _____
 Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Biased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F - tank 101	0	-4	108	16				
2	F - tank 101	0	-8	90	17				
3	F - ^{SRC} pipes	0	-4	24	18				
4	F - tank 651	0	-4	30	19				
5	F - tank 651	0	4	60	20				
6	F - tank 652	9	24	30	21				
7	F - tank 652	0	-16	54	22				
8	F - Valve	0	-20	36	23				
9	F - Valve	0	-8	84	24				
10	F - valve	0	-16	114	25				
11	F - pipes	9	0	96	26				
12	F - pipes	9	20	102	27				
13	END OF SURVEY				28				
14					29				
15					30				

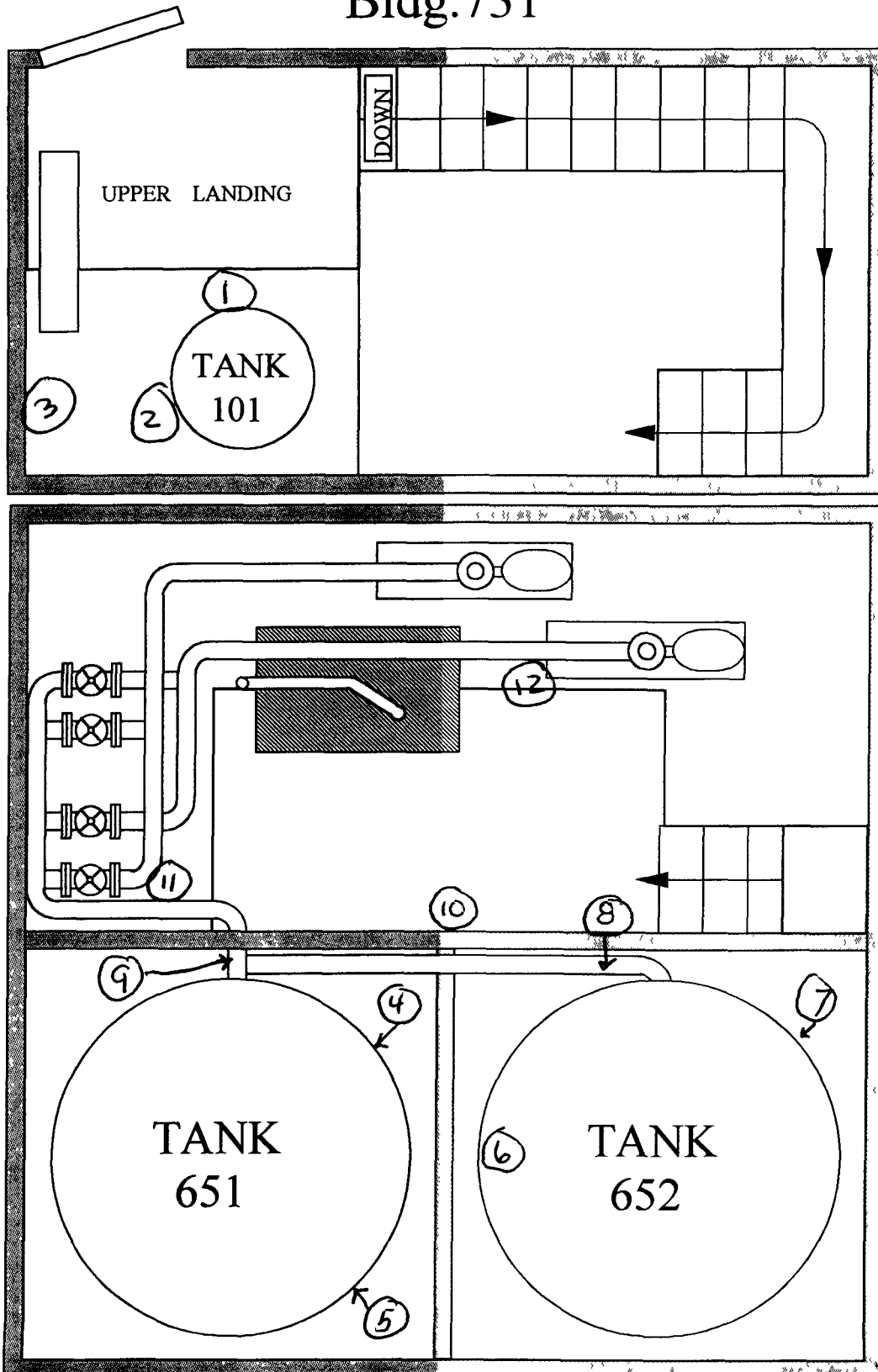
Date Reviewed: 5-8-00 RS Supervision: _____

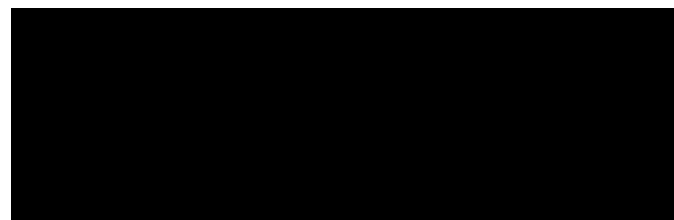
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Bldg.731



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA****Survey Type Contamination**Building 731Location Ceiling/Walls > 2mSurvey Area CCPurpose Reconnaissance Level CharacterizationRWP # 00-707-1204Date 5-3-00 Time 2200

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>1233</u>
Cal Due <u>8-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.4 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>12.9 dpm</u>	MDA <u>148 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>959</u>	Serial # <u>833</u>	Serial # <u>3265</u>
Cal Due <u>7-19-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>40 cpm</u>	Bkg <u>45 cpm</u>	Bkg <u>1 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>17%</u>
MDA <u>981 dpm</u>	MDA <u>1035 dpm</u>	MDA <u>94 dpm</u>

Comments Ceiling / Walls > 2 meters Biased survey points1 minute pats and swipes See map for locations**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	<u>See Map</u>	<u>0</u>	<u>-4</u>	<u>24</u>	16	<u>NA</u>			
2	<u>See Map</u>	<u>3</u>	<u>-4</u>	<u>18</u>	17				
3	<u>See Map</u>	<u>0</u>	<u>-24</u>	<u>60</u>	18				
4	<u>See Map</u>	<u>6</u>	<u>-24</u>	<u>18</u>	19				
5	<u>See Map</u>	<u>0</u>	<u>-8</u>	<u>90</u>	20				
6	<u>See Map</u>	<u>3</u>	<u>12</u>	<u>24</u>	21				
7	<u>See Map</u>	<u>0</u>	<u>-16</u>	<u>18</u>	22				
8	<u>See Map</u>	<u>3</u>	<u>20</u>	<u>12</u>	23				
9	<u>See Map</u>	<u>0</u>	<u>-4</u>	<u>36</u>	24				
10	<u>See Map</u>	<u>6</u>	<u>-24</u>	<u>54</u>	25				
11	<u>END OF Survey</u>			<u>NA</u>	26				
12					27				
13					28				
14					29				
15	<u>NA</u>				30				<u>NA</u>

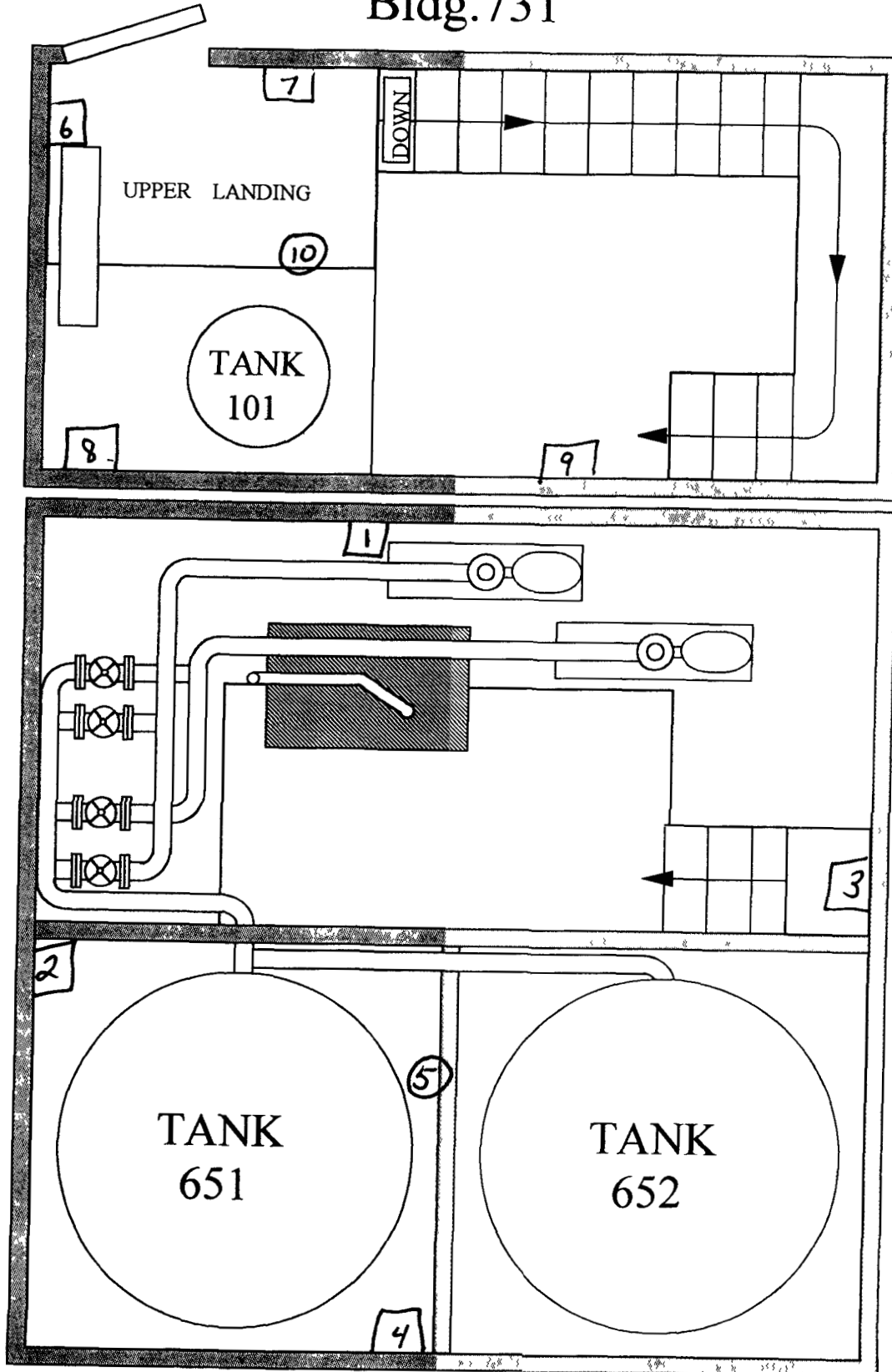
Date Reviewed 5-8-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Bldg. 731



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>1233</u>
Cal Due <u>8-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.4 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>12.9 dpm</u>	MDA <u>14.8 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>959</u>	Serial # <u>833</u>	Serial # <u>3265</u>
Cal Due <u>7-19-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>40 cpm</u>	Bkg <u>45 cpm</u>	Bkg <u>1 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>17%</u>
MDA <u>98.1 dpm</u>	MDA <u>103.5 dpm</u>	MDA <u>94 dpm</u>

Survey Type Contamination

Building 731
 Location 731 Equipment Survey Area CC
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 5-3-00 Time 2200Comments Equipment Biased survey points1 minute pats and swipes See map for locationsArea has a lot of Fixed contamination Posted with labels**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	See Map	0	-12	42	16	See Map	0	32	42
2	See Map	3	0	60	17	See Map	0	24	24
3	See Map	0	24	192	18	See Map	3	8	60
4	See Map	6	76	90	19	See Map	0	-56	42
5	See Map	0	-28	48	20	See Map	9	12	300
6	See Map	6	-4	180	21	See Map	0	20	216
7	See Map	0	-24	30	22	See Map	3	-20	180
8	See Map	0	-40	66	23	See Map	0	-8	42
9	See Map	3	20	144	24	See Map	6	-40	192
10	See Map	3	-28	60	25	See Map	0	36	30
11	See Map	18	-24	3162	26	See Map	3	-12	60
12	See Map	15	-4	342	27	See Map	3	20	42
13	See Map	0	48	180	28	See Map	174	88	24
14	See Map	3	0	18	29	See Map	0	20	24
15	See Map	0	-8	90	30	See Map	0	-4	18

Date Reviewed 5-8-00 RS Supervision. [REDACTED]

Print Name

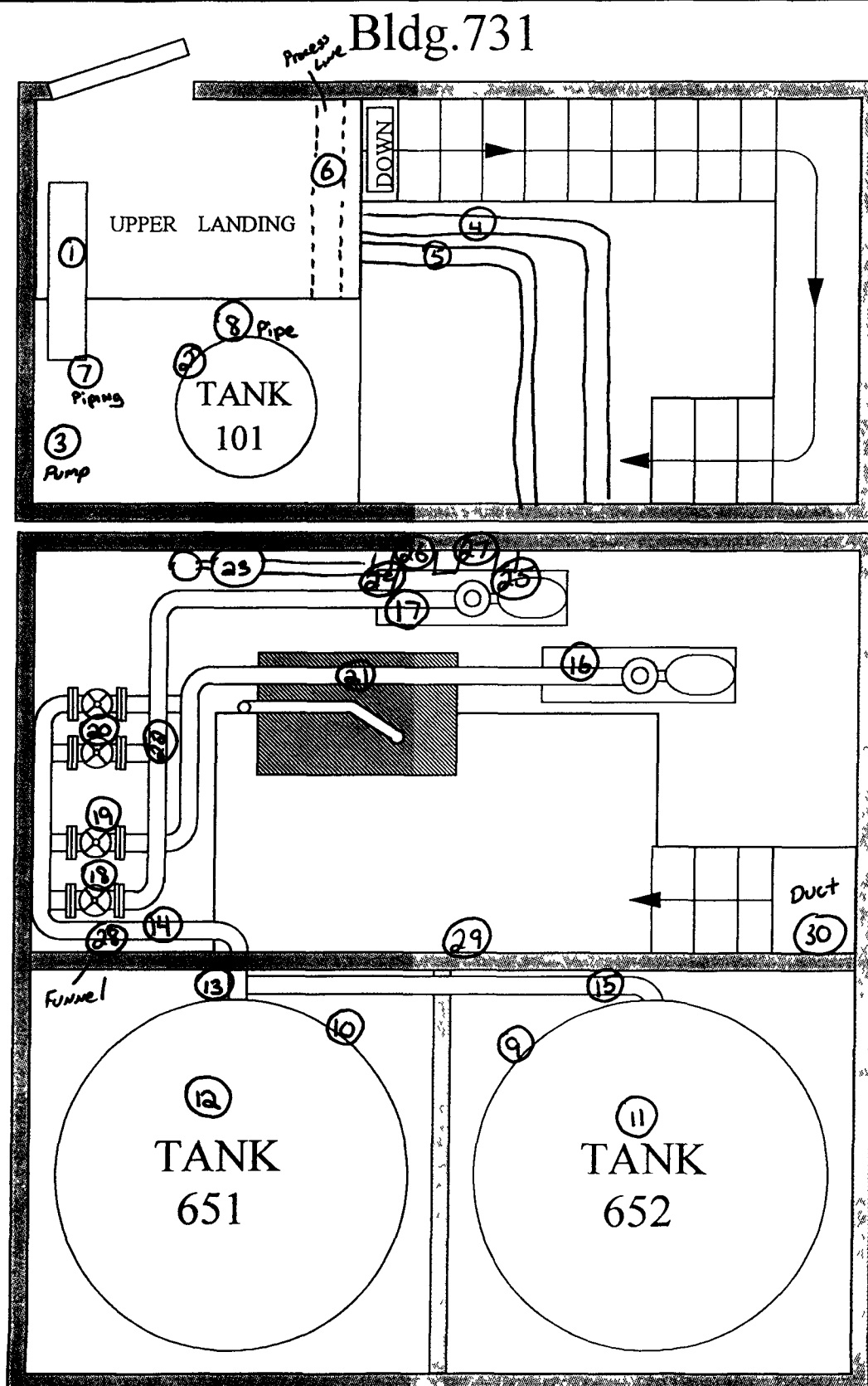
Signature

Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

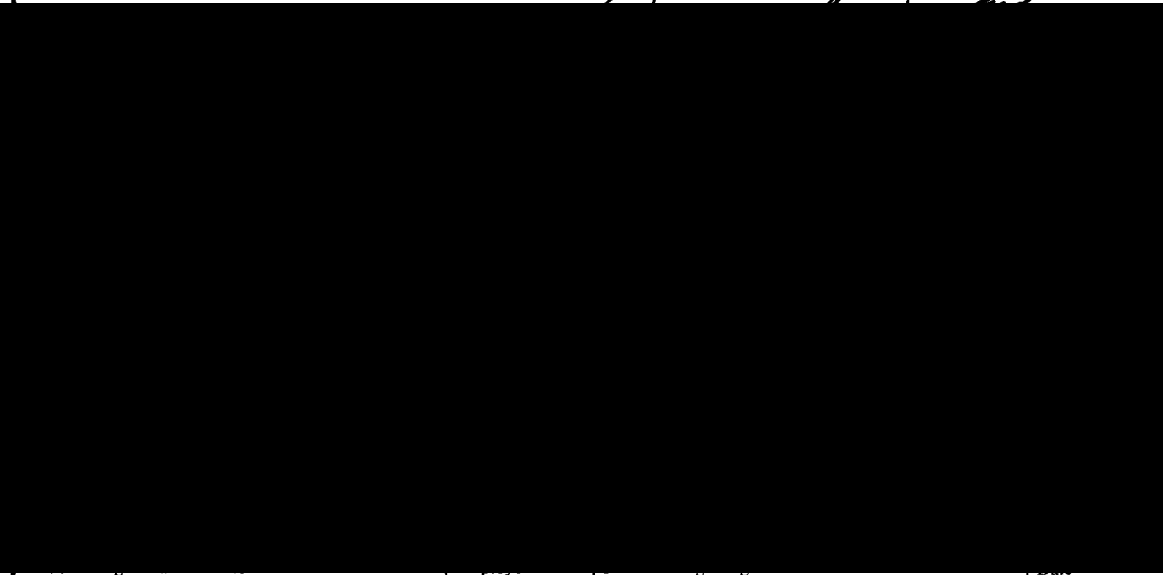
Package ID 99-0002		Building 707 EXT TANKS		Type 1	
Survey Area DD		Survey Unit N/A		Area (m²) <1000	
Survey Unit Description TANKS T-223 (LIQUID NITROGEN), T-16 (DIESEL), T209 THROUGH T221 AND T-284 (HELIUM), T-208 (LIQUID ARGON), T-206 (CARBON TETRACHLORIDE), T-16 (DIESEL), T-290 (DIESEL), T-324 (DIESEL), T-325 (DIESEL)					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
N/A	N/A	44	0	0	44
Building		Type		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building.		Type.		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

Page Superseded RSM 4/29/00 Change #4

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707 EXT TANKS		Type 1	
Survey Area DD		Survey Unit N/A		Area (m ²) <1000	
Survey Unit Description TANKS T-223 (LIQUID NITROGEN), T-16 (DIESEL), T209 THROUGH T221 AND T-284 (HELIUM), T-208 (LIQUID ARGON), T-206 (CARBON TETRACHLORIDE), T-16 (DIESEL), T-290 (DIESEL), T-324 (DIESEL), T-325 (DIESEL)					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
N/A	N/A	88	0	0	88
Building		Type		Survey Area	
Survey Unit		Area (m ²)			
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
		88			88
Building		Type		Survey Area	
Survey Unit		Area (m ²)			
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit		Area (m ²)			
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707 EXTERIOR TANKS
Survey Area: DD	Survey Unit: N/A
Survey Unit Description: Tanks T-223 (liquid Nitrogen), T-16 (diesel), T209 through T221 and T-284 (Helium), T-208 (liquid Argon), T-206 (carbon tetrachloride), T-16 (diesel), T-290 (diesel), T-324 (diesel), T-325 (diesel)	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input checked="" type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to areas on sides/tops of tanks may require additional controls Review RWP requirements and surveys prior to entry Use caution around liquid nitrogen tanks	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation: N/A	
	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707 EXTERIOR TANKS
Survey Area: DD		Survey Unit N/A
Survey Unit Description: TANKS T-223 (LIQUID NITROGEN), T-16 (DIESEL), T209 THROUGH T221 AND T-284 (HELIUM), T-208 (LIQUID ARGON), T-206 (CARBON TETRACHLORIDE), T-16 (DIESEL), T-290 (DIESEL), T-324 (DIESEL), T-325 (DIESEL)		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	FLOORS/WALLS < 2 meters N/A CEILINGS/WALLS > 2 meters N/A EQUIPMENT 44 <u>biased</u> survey points on tanks and associated equipment <ul style="list-style-type: none"> - 1 survey point per tank (tank proper) - 1 survey point on piping/equipment - Other equipment as determined by RCT 	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4

Page superseded RSM 4/20/00 Change #5

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707 EXTERIOR TANKS
Survey Area: DD		Survey Unit N/A
Survey Unit Description: TANKS T-223 (LIQUID NITROGEN), T-16 (DIESEL), T209 THROUGH T221 AND T-284 (HELIUM), T-208 (LIQUID ARGON), T-206 (CARBON TETRACHLORIDE), T-16 (DIESEL), T-290 (DIESEL), T-324 (DIESEL), T-325 (DIESEL)		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters N/A</p> <p>CEILINGS/WALLS > 2 meters N/A</p> <p>EQUIPMENT</p> <p>88 <u>biased</u> survey points on tanks and associated equipment</p> <ul style="list-style-type: none"> - 2 survey points per tank (tank proper) - 1 survey point beneath each tank - 1 survey point on piping/equipment - Other equipment as determined by RCT 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building: 707 complex tanks
Survey Area: DD		Survey Unit N/A
Survey Unit Description: TANKS T-223 (LIQUID NITROGEN), T-16 (DIESEL), T209 THROUGH T221 AND T-284 (HELIUM), T-208 (LIQUID ARGON), T-206 (CARBON TETRACHLORIDE), T-16 (DIESEL), T-290 (DIESEL), T-324 (DIESEL), T-325 (DIESEL)		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters N/A CEILINGS/WALLS > 2 meters N/A EQUIPMENT 44 1 m ² surface scans shall be taken at each location identified for non-biased surface activity measurements Locations found to be above the DCGL will be noted	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Page Superseded RSM 4/20/00 Change #6

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707 complex tanks
Survey Area: DD		Survey Unit N/A
Survey Unit Description: TANKS T-223 (LIQUID NITROGEN), T-16 (DIESEL), T209 THROUGH T221 AND T-284 (HELIUM), T-208 (LIQUID ARGON), T-206 (CARBON TETRACHLORIDE), T-16 (DIESEL), T-290 (DIESEL), T-324 (DIESEL), T-325 (DIESEL)		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters N/A CEILINGS/WALLS > 2 meters N/A EQUIPMENT 88 1 m ² surface scans shall be taken at each location identified for non-biased surface activity measurements. Locations found to be above the DCGL will be noted.	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707 complex tanks
Survey Area: DD	Survey Unit N/A
Survey Unit Description: TANKS T-223 (LIQUID NITROGEN), T-16 (DIESEL), T209 THROUGH T221 AND T-284 (HELIUM), T-208 (LIQUID ARGON), T-206 (CARBON TETRACHLORIDE), T-16 (DIESEL), T-290 (DIESEL), T-324 (DIESEL), T-325 (DIESEL)	
Survey/Sampling Instructions	
<p>NOTE 1. Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none">- Direct alpha contamination- Direct beta contamination- Removable alpha contamination- Removable beta contamination- 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707 complex tanks
Survey Area: DD	Survey Unit N/A
Survey Unit Description: TANKS T-223 (LIQUID NITROGEN), T-16 (DIESEL), T209 THROUGH T221 AND T-284 (HELIUM), T-208 (LIQUID ARGON), T-206 (CARBON TETRACHLORIDE), T-16 (DIESEL), T-290 (DIESEL), T-324 (DIESEL), T-325 (DIESEL)	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

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Pg superseded 01/18/00 JF Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: DD	Survey Unit N/A
Survey Unit Description TANKS T-223 (LIQUID NITROGEN), T-16 (DIESEL), T209 THROUGH T221 AND T-284 (HELIUM), T-208 (LIQUID ARGON), T-206 (CARBON TETRACHLORIDE), T-16 (DIESEL), T-290 (DIESEL), T-324 (DIESEL), T-325 (DIESEL)	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02. Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and <u>in addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering. Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: DD	Survey Unit N/A
Survey Unit Description : TANKS T-223 (LIQUID NITROGEN), T-16 (DIESEL), T209 THROUGH T221 AND T-284 (HELIUM), T-208 (LIQUID ARGON), T-206 (CARBON TETRACHLORIDE), T-16 (DIESEL), T-290 (DIESEL), T-324 (DIESEL), T-325 (DIESEL)	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assure that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

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[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID 99-0002		Building 707 EXTERIOR TANKS		
Survey Area DD		Survey Unit N/A		
Survey Type Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>				
All Documentation Reviewed for Completion	RCT Supervisor	PRE		
Scan Surveys	<i>J</i>	<i>KDM</i>		
Total Activity Surveys	<i>J</i>	<i>KDM</i>		
Exposure Rate Surveys	NA	NA		
Removable Surveys	<i>J</i>	<i>KDM</i>		
Media Samples	NA	NA		
Volumetric Samples	NA	NA		
All Surveys and Samples Accounted For	RCT Supervisor	PRE		
Scan Surveys	<i>J</i>	<i>KDM</i>		
Total Activity Surveys	<i>J</i>	<i>KDM</i>		
Exposure Rate Surveys	NA	NA		
Removable Surveys	<i>J</i>	<i>KDM</i>		
Media Samples	NA	NA		
Volumetric Samples	NA	NA		
Comments <i>A total of 19 tanks (38 measurements) were surveyed</i> <i>T-16 was identified twice, 3 tanks underground, added T-711</i>				
<div style="background-color: black; width: 100%; height: 100%;"></div>				
				00
				100
<div style="background-color: black; width: 100%; height: 100%;"></div>				
<div style="background-color: black; width: 100%; height: 100%;"></div>				
RESS Manager Printed Name		Employee #	RESS Manager Signature	
			Date	

NON-DESTRUCTIVE ENVIRONMENTAL TECHNOLOGY SURVEY

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____		
Model _____	Model _____	Model _____	Building _____		
Serial # _____	Serial # _____	Serial # _____	Location* _____		
Cal Due _____	Cal Due _____	Cal Due _____	Purpose _____		
Bkg _____	Bkg. _____	Bkg _____	RWP # _____		
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____		
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____		
Mfg. _____	Mfg _____	Mfg _____	Print name _____ Signature _____ Emp # _____		
Model _____	Model _____	Model _____	RCT _____ / _____ / _____		
Serial # _____	Serial # _____	Serial # _____	Print name _____ Signature _____ Emp # _____		
Cal Due _____	Cal Due _____	Cal Due _____			
Bkg _____	Bkg _____	Bkg _____			
Efficiency _____	Efficiency _____	Efficiency _____			
MDA _____	MDA _____	MDA _____			

PRL # : _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1 _____	_____	_____	_____	26 _____	_____	_____	_____
2 _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33 _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

Date Reviewed: _____

RS Supervision: _____

Print Name _____

Signature _____

Emp # _____

708

392 / 466

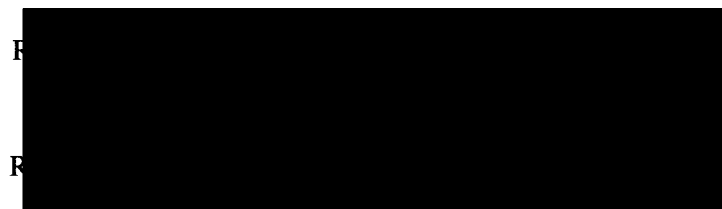
REVISIONS: 1. 05/98
INITIAL TECHNOLOGY SHEET

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE.

**SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07 02,
*Contamination Monitoring Requirements.***

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA****Survey Type Contamination**Building Exterior 707 TanksLocation Various TanksSurvey Area DDPurpose Reconnaissance Level CharacterizationRWP # 00-707-1204Date 5-1-00Time 1630

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>1518</u>
Cal Due <u>8-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.3 cpm</u>	Bkg <u>0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>1.2 dpm</u> <u>5-1-00</u>	MDA <u>1.3 dpm</u> <u>8-1-00</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>/</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>/</u>
Serial # <u>939</u>	Serial # <u>833</u>	Serial # <u>/</u>
Cal Due <u>7-19-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>/</u>
Bkg <u>40 cpm</u>	Bkg <u>36 cpm</u>	Bkg <u>/</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>/</u>
MDA <u>98.1 dpm</u>	MDA <u>937 dpm</u>	MDA <u>/</u>

Comments Equipment Biased survey points1 minute pats and swipes See map for locations

T-290 tank & piping underground & inaccessible (Also TH concern).
T-324, T-325 not found - unable to locate - assume underground tanks
or they were taken off site. Did do T-711 Diesel tank. (not on list)

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	T-223	0	0	42	16	T-214 piping	0	-12	18
2	T-223 piping	0	36	36	17	T-215	0	8	24
3	T-16	0	-36	48	18	T-215 piping	3	56	36
4	T-16 piping	0	-16	36	19	T-216	0	16	42
5	T-209	3	28	90	20	T-216 piping	3	12	72
6	T-209 piping	3	12	48	21	T-217	6	-36	42
7	T-210	0	16	48	22	T-217 piping	0	16	54
8	T-210 piping	3	40	36	23	T-218	0	-8	30
9	T-211	0	20	42	24	T-218 piping	6	-4	30
10	T-211 piping	3	52	48	25	T-219	0	16	36
11	T-212	3	12	60	26	T-219 piping	0	12	48
12	T-212 piping	0	8	36	27	T-220	0	-4	18
13	T-213	0	-42	48	28	T-220 piping	0	32	48
14	T-213 piping	3	-4	42	29	T-221	3	-36	36
15	T-214	0	-4	36	30	T-221 piping	0	4	42

Date Reviewed 5-2-00

RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY****Drawing Showing Survey Points**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	T-284	0	44	18	61	NA			
32	T-284 piping	3	84	36	62				
33	T-208	0	16	48	63				
34	T-208 piping	0	-4	78	64				
35	T-206	0	-16	66	65				
36	T-206 piping	6	0	42	66				
37	T-711	3	-4	78	67				
38	T-711 piping	0	16	48	68				
39	END OF SURVEY			NA	69				
40					70				
41					71				
42					72				
43					73				
44					74				
45					75				
46					76				
47					77				
48					78				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60	NA				90				NA

711

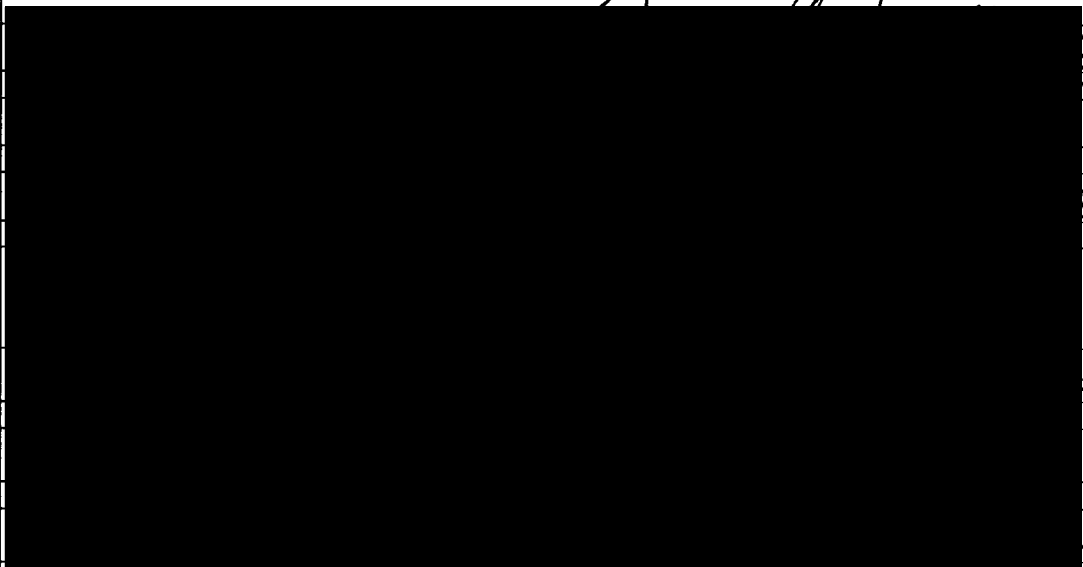
SURVEY PACKAGE TRACKING FORM

[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 711, 711A, 718		Type 1	
Survey Area EE		Survey Unit N/A		Area (m ²) 393	
Survey Unit Description BUILDINGS 711 (COOLING TOWER), 711A (EMERGENCY DIESEL PUMP FOR COOLING TOWER), 718 (COOLING TOWER SERVICE BUILDING)					
Survey Type			Classification		
RLC Survey X FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
40	30	30	2	4	40
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 711, 711A, 718			
Survey Area: EE	Survey Unit: N/A			
Survey Unit Description: Buildings 711 (cooling tower), 711A (emergency diesel pump for cooling tower), 718 (cooling tower service buiding)				
Building Information:				
Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/>				
Building Type Type 1 <input checked="" type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input type="checkbox"/>				
Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>				
Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____				
Justification for Classification: N/A				
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads				
Special Safety Precautions: Notify security personnel prior to accessing elevated surfaces such as platforms, roofs, or stairs Access to roofs/structures areas may require additional controls Review RWP/facility requirements and surveys prior to entry Roof area on Building 711 (cooling tower) may be hazardous – use caution				
Isolation Controls:				
Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>				
Labeling Requirements: NONE				
Survey Package Implementation: N/A				
				
				5/99
				5/99
				5/00
				7/00
RESS Manager Printed Name	Employee #	RESS Manager Signature	Date	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 711, 711A, 718
Survey Area: EE		Survey Unit N/A
Survey Unit Description: BUILDINGS 711 (COOLING TOWER), 711A (EMERGENCY DIESEL PUMP FOR COOLING TOWER), 718 (COOLING TOWER SERVICE BUILDING)		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>40 <u>unbiased</u> survey points uniformly distributed as follows</p> <ul style="list-style-type: none"> - 25 survey points inside of the cooling tower structure (Building 711) - 10 survey points within Building 718 - 5 survey points beneath pump/equipment associated with emergency diesel pump (711A) <p>NO <u>biased</u> survey points</p> <p>CEILINGS/WALLS > 2 meters</p> <p>30 <u>biased</u> surveys of ceilings and walls of 711 and 718</p> <p>EQUIPMENT</p> <p>30 <u>biased</u> survey points on equipment with one or more samples from</p> <ul style="list-style-type: none"> - 12 survey points on emergency diesel pump (Building 711A) and related piping/equipment - 8 survey points on piping/associated equipment (where locations are accessible through reach tools) within Building 718 - 10 survey points on piping/associated equipment (where locations are accessible through reach tools) within Building 711 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 711, 711A, 718
Survey Area: EE		Survey Unit: N/A
Survey Unit Description BUILDINGS 711 (COOLING TOWER), 711A (EMERGENCY DIESEL PUMP FOR COOLING TOWER), 718 (COOLING TOWER SERVICE BUILDING)		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 40 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Two biased paint (media) samples collected as follows: <ul style="list-style-type: none"> - 1 from building 718 (cooling tower service building) - 1 from building 711 (cooling tower) 	SEE NOTE 5
Volumetric Samples	Four sludge samples from Building 711 cooling tower	
Isotopic Gamma Scans	NONE	

Pg. succeeded 01/18/00 [Signature] Chg #2

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 711, 711A, 718
Survey Area: EE	Survey Unit: N/A
Survey Unit Description: BUILDINGS 711 (COOLING TOWER), 711A (EMERGENCY DIESEL PUMP FOR COOLING TOWER), 718 (COOLING TOWER SERVICE BUILDING)	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 711, 711A, 718
Survey Area: EE	Survey Unit N/A
Survey Unit Description: BUILDINGS 711 (COOLING TOWER), 711A (EMERGENCY DIESEL PUMP FOR COOLING TOWER), 718 (COOLING TOWER SERVICE BUILDING)	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media "</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building: 707
Survey Area: EE	Survey Unit: N/A
Survey Unit Description: : BUILDINGS 711 (COOLING TOWER), 711A (EMERGENCY DIESEL PUMP FOR COOLING TOWER), 718 (COOLING TOWER SERVICE BUILDING)	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

By superseded 01/18/00 JF Chey #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: EE	Survey Unit N/A
Survey Unit Description: BUILDINGS 711 (COOLING TOWER), 711A (EMERGENCY DIESEL PUMP FOR COOLING TOWER), 718 (COOLING TOWER SERVICE BUILDING)	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 711, 711A, 718	
Survey Area: EE		Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys		1	EDM
Total Activity Surveys		1	EDM
Exposure Rate Surveys		NA	NA
Removable Surveys		1	EDM
Media Samples		NA ①	NA ①
Volumetric Samples		NA ②	NA ②
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys		1	EDM
Total Activity Surveys		1	EDM
Exposure Rate Surveys		NA	NA
Removable Surveys		1	EDM
Media Samples		NA ①	NA ①
Volumetric Samples		NA ②	NA ②
Comments ① no media samples taken, no paint at locations identified in survey package ② no volumetric samples taken, 711 flooded w/ 20 inches of water			
<div style="background-color: black; width: 100%; height: 100%; min-height: 100px;"></div>		5-3-00	
		Date	
		5/15/00	
		Date	
RESS Manager Printed Name		Employee #	RESS Manager Signature
			Date
			5/15/00

~~NON-CLASSIFIED AND NON-PROLIFERATION TECHNOLOGY SITE~~

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____		
Model _____	Model _____	Model _____	Building _____		
Serial # _____	Serial # _____	Serial # _____	Location* _____		
Cal Due _____	Cal Due _____	Cal Due _____	Purpose _____		
Bkg _____	Bkg. _____	Bkg. _____	RWP # _____		
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____		
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____		
			Print name Signature Emp #		
Mfg. _____	Mfg. _____	Mfg. _____	RCT _____ / _____ / _____		
Model _____	Model _____	Model _____	Print name Signature Emp #		
Serial # _____	Serial # _____	Serial # _____			
Cal Due _____	Cal Due _____	Cal Due _____			
Bkg _____	Bkg _____	Bkg _____			
Efficiency _____	Efficiency _____	Efficiency _____			
MDA _____	MDA _____	MDA _____			

PRL #: _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1				26			
2				27			
3				28			
4				29			
5				30			
6				31			
7				32			
8				33			
9				34			
10				35			
11				36			
12				37			
13				38			
14				39			
15				40			
16				41			
17				42			
18				43			
19				44			
20				45			
21				46			
22				47			
23				48			
24				49			
25				50			

Date Reviewed: _____ RS Supervision: _____ / _____ / _____

Print Name

Signature

Emp #

723

401/466

CENTRAL TECHNOLOGY SUBE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE.

**SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07 02,
*Contamination Monitoring Requirements***

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>1518</u>
Cal Due <u>8-18-00</u>	Cal Due <u>7-27-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>11.5 dpm</u>	MDA <u>12.9 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>/</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>/</u>
Serial # <u>959</u>	Serial # <u>833</u>	Serial # <u>/</u>
Cal Due <u>7-19-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>N/A</u>
Bkg <u>35 cpm</u>	Bkg <u>43 cpm</u>	Bkg <u>/</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>/</u>
MDA <u>92.5 dpm</u>	MDA <u>101.3 dpm</u>	MDA <u>/</u>

Survey Type Contamination

Building 711, 711A, 718
 Location 711A + 718 Survey Area EE
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 5-2-00 Time 1630

Print name / Signature / Emp #

Comments Floor / Walls < 2 meters Unbiased survey points1 m² scans, 1 minute pats and swipes See map for locationsBuilding 711 (inside not accessible)**SURVEY RESULTS**

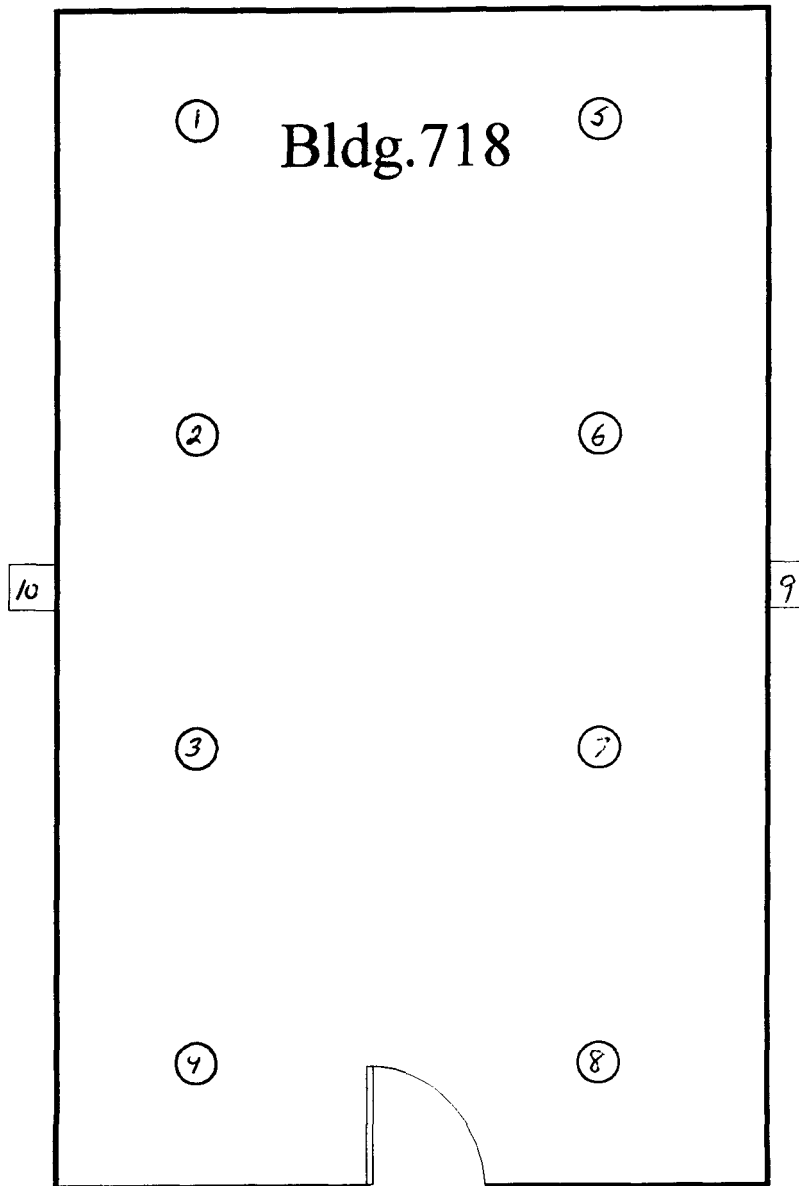
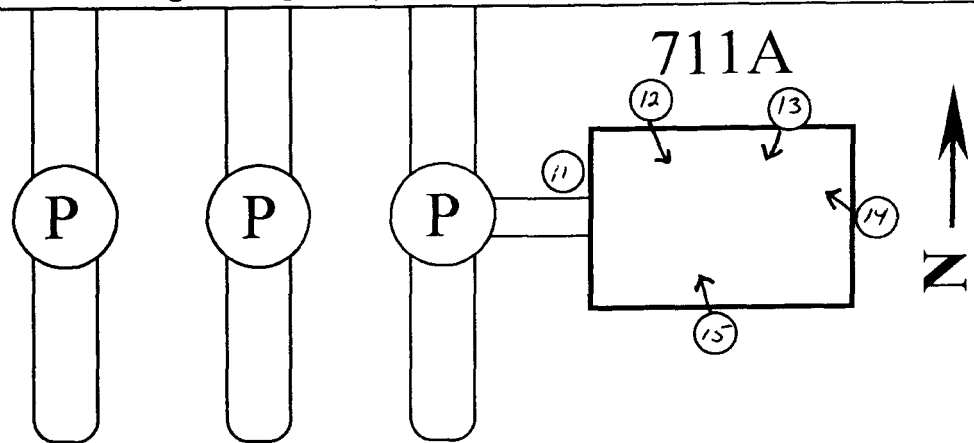
Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	<u>See Map</u>	0	24	24	16	<u>N/A</u>			
2	<u>See Map</u>	0	-20	18	17				
3	<u>See Map</u>	3	4	30	18				
4	<u>See Map</u>	0	-36	24	19				
5	<u>See Map</u>	0	0	24	20				
6	<u>See Map</u>	0	8	-12	21				
7	<u>See Map</u>	3	40	36	22				
8	<u>See Map</u>	6	48	42	23				
9	<u>See Map</u>	0	32	36	24				
10	<u>See Map</u>	0	-20	18	25				
11	<u>See Map</u>	0	64	78	26				
12	<u>See Map</u>	0	0	96	27				
13	<u>See Map</u>	0	16	84	28				
14	<u>See Map</u>	0	-44	148	29				
15	<u>See Map</u>	0	12	180	30				

Date Reviewed 5-2-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

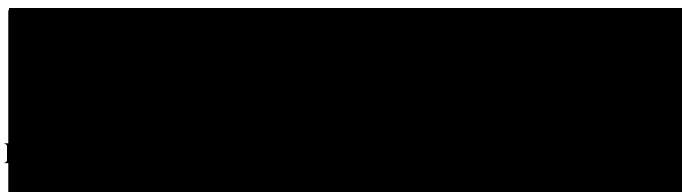


ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>1518</u>
Cal Due <u>8-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>0.4 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>115 dpm</u>	MDA <u>129 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>/</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>/</u>
Serial # <u>959</u>	Serial # <u>833</u>	Serial # <u>/</u>
Cal Due <u>7-19-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>NA</u>
Bkg <u>35 cpm</u>	Bkg <u>43 cpm</u>	Bkg <u>/</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>/</u>
MDA <u>925 dpm</u>	MDA <u>1013 dpm</u>	MDA <u>/</u>

Survey Type Contamination

Building 711, 711A, 718
 Location 718 Survey Area EE
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 5-2-00 Time 1630

Comments Ceiling / Walls > 2 meters Biased survey points
1 minute pats and swipes See map for locations

Building 711 (inside not accessible)**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	<u>See Map</u>	<u>0</u>	<u>24</u>	<u>24</u>	16	<u>NA</u>			
2	<u>See Map</u>	<u>6</u>	<u>-4</u>	<u>24</u>	17				
3	<u>See Map</u>	<u>0</u>	<u>-4</u>	<u>18</u>	18				
4	<u>See Map</u>	<u>0</u>	<u>-16</u>	<u>36</u>	19				
5	<u>See Map</u>	<u>0</u>	<u>24</u>	<u>42</u>	20				
6	<u>See Map</u>	<u>0</u>	<u>-8</u>	<u>0</u>	21				
7	<u>See Map</u>	<u>0</u>	<u>-4</u>	<u>24</u>	22				
8	<u>See Map</u>	<u>6</u>	<u>-16</u>	<u>36</u>	23				
9	<u>See Map</u>	<u>0</u>	<u>40</u>	<u>18</u>	24				
10	<u>See Map</u>	<u>0</u>	<u>-8</u>	<u>6</u>	25				
11	<u>END OF SURVEY</u>			<u>NA</u>	26				
12					27				
13					28				
14					29				
15	<u>NA</u>				30				<u>NA</u>

Date Reviewed 5-2-00 RS Supervision

Print Name

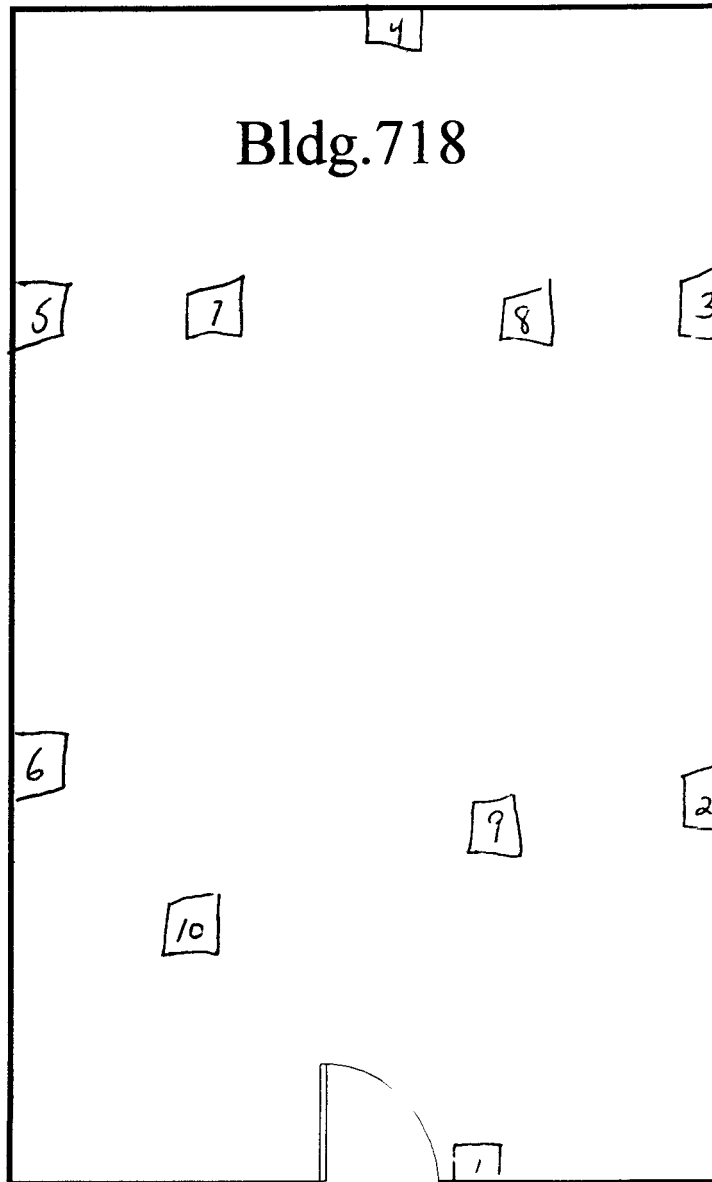
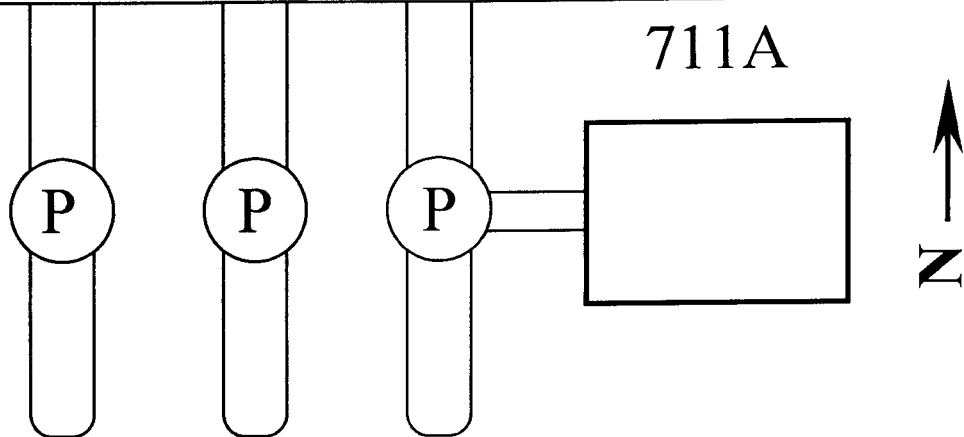
Signature

Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

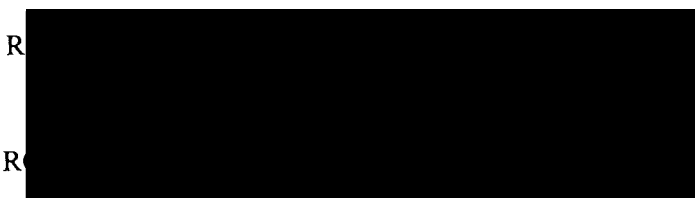


ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>3265</u>
Cal Due <u>8-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>4 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>17%</u>
MDA <u>11.5 dpm</u>	MDA <u>12.9 dpm</u>	MDA <u>94 dpm</u>
Mfg Eberline	Mfg Eberline	Mfg NeTech
Model BC-4	Model BC-4	Model Electra
Serial # <u>959</u>	Serial # <u>833</u>	Serial # NA
Cal Due <u>7-19-00</u>	Cal Due <u>7-14-00</u>	Cal Due NA
Bkg <u>35 cpm</u>	Bkg <u>43 cpm</u>	Bkg NA
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency NA
MDA <u>92.5 dpm</u>	MDA <u>101.3 dpm</u>	MDA NA

Survey Type Contamination

Building 711, 711A, 718
 Location 711A + 718 Survey Area EE
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 5-2-00 Time 1630

Comments Equipment Biased survey points
1 minute pats and swipes See map for locations

Building 711 (inside not accessible)

SURVEY RESULTS

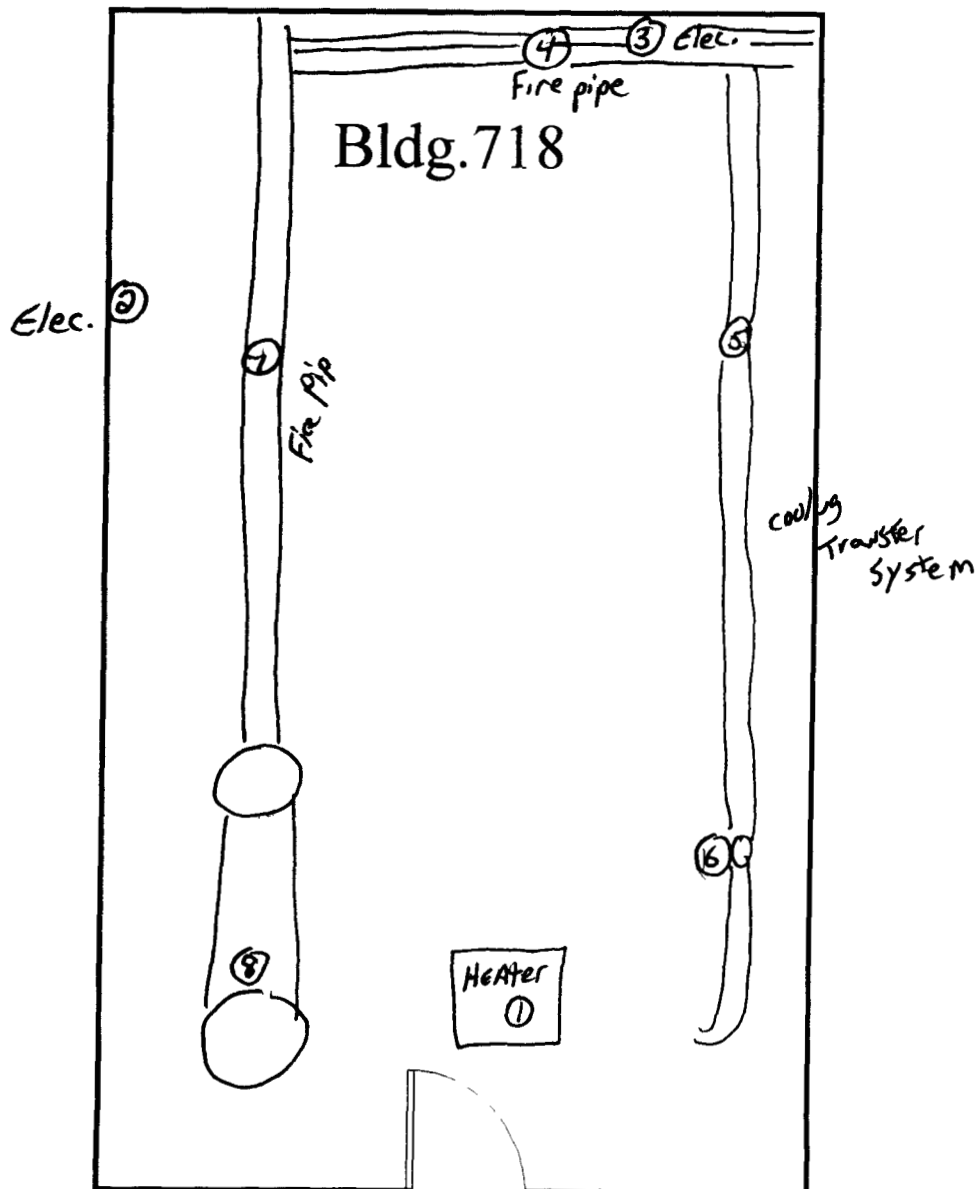
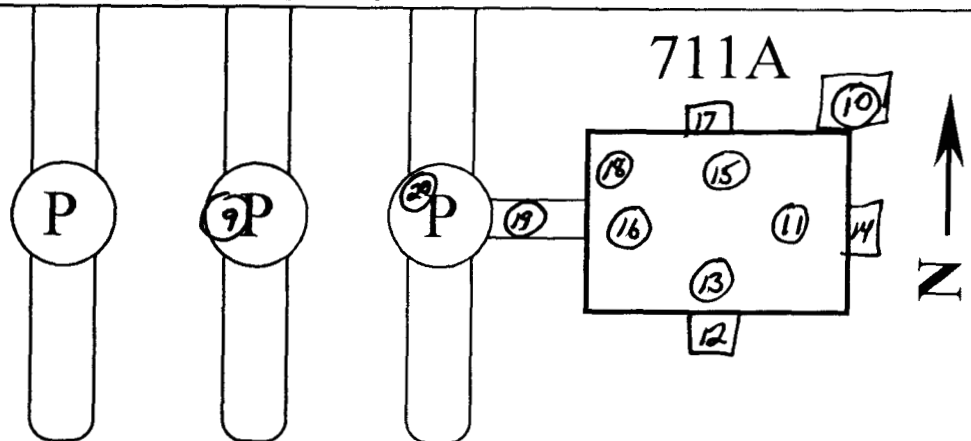
Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	<u>See Map</u>	0	12	24	16	<u>See Map</u>	3	48	48
2	<u>See Map</u>	3	-12	18	17	<u>See Map</u>	0	12	12
3	<u>See Map</u>	0	24	6	18	<u>See Map</u>	0	-24	72
4	<u>See Map</u>	6	-12	24	19	<u>See Map</u>	0	60	60
5	<u>See Map</u>	6	-16	36	20	<u>See Map</u>	3	36	66
6	<u>See Map</u>	3	-24	48	21	<u>END OF SURVEY</u>			NA
7	<u>See Map</u>	6	28	18	22				
8	<u>See Map</u>	0	-24	42	23				
9	<u>See Map</u>	9	28	30	24				
10	<u>See Map</u>	6	-8	30	25				
11	<u>See Map</u>	9	16	42	26				
12	<u>See Map</u>	6	0	24	27				
13	<u>See Map</u>	0	4	42	28				
14	<u>See Map</u>	3	-20	48	29				
15	<u>See Map</u>	3	-8	60	30	<u>NA</u>			

Date Reviewed. 5-2-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



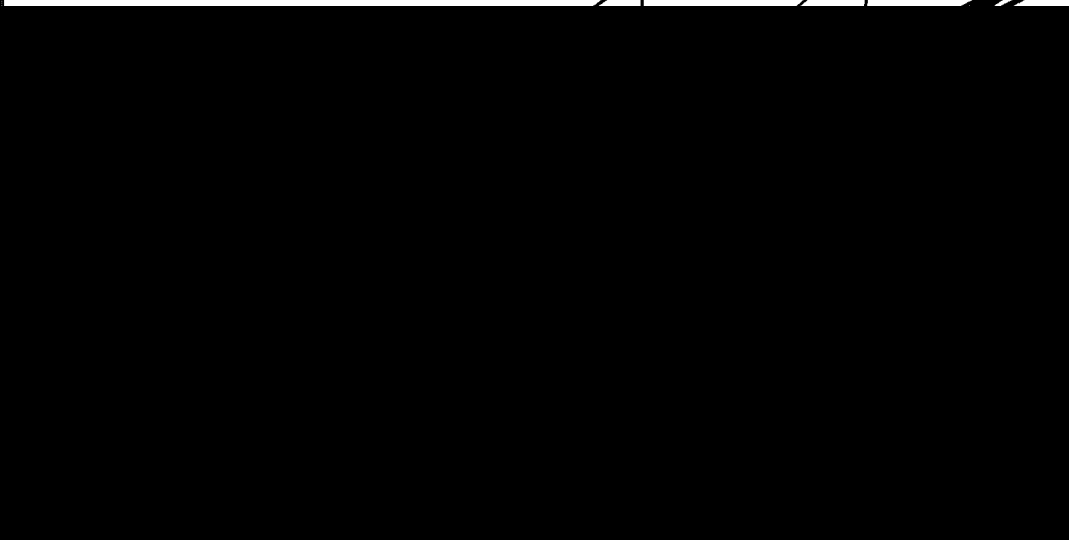
SURVEY PACKAGE TRACKING FORM

[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 711		Type 1	
Survey Area FF		Survey Unit N/A		Area (m ²) per building	
Survey Unit Description ROOF OF BUILDING 711 (COOLING TOWER)					
Survey Type			Classification		
RLC Survey X FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	0	0	0	0	30
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 711 (EXTERIOR/ROOF)		
Survey Area: FF	Survey Unit: N/A		
Survey Unit Description: Roof of Building 711 (cooling tower)			
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input checked="" type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____			
Justification for Classification: N/A			
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads			
Special Safety Precautions: Notify security personnel prior to accessing elevated surfaces such as platforms, roofs, or stairs. Access to roofs/structures areas may require additional controls. Review RWP/facility requirements and surveys prior to entry. Roof area on Building 711 (cooling tower) may be hazardous – use caution			
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>			
Labeling Requirements: NONE			
Survey Package Implementation: N/A			
 <div style="position: absolute; right: 0; top: 0;">5/99</div> <div style="position: absolute; right: 0; top: 100px;">5/99</div> <div style="position: absolute; right: 0; top: 200px;">12/00</div> <div style="position: absolute; right: 0; top: 300px;">12/00</div>			
RESS Manager Printed Name	Employee #	RESS Manager Signature	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 711 (EXTERIOR/ROOF)
Survey Area: FF		Survey Unit N/A
Survey Unit Description. ROOF/EXTERIOR OF BUILDING 711 (COOLING TOWER)		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	ROOF/EXTERIOR WALLS 30 uniformly distributed survey points distributed as follows - 10 on walls (< 2 meters) - 20 on roof of Building 711 FLOORS/WALLS < 2 meters N/A CEILINGS/WALLS > 2 meters N/A EQUIPMENT N/A	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID 99-0002		Building 711
Survey Area: FF		Survey Unit N/A
Survey Unit Description ROOF/EXTERIOR OF BUILDING 711 (COOLING TOWER)		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	ROOF/EXTERIOR WALLS 30 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. FLOORS/WALLS < 2 meters N/A CEILINGS/WALLS > 2 meters N/A EQUIPMENT N/A	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Pg superseded 01/18/00 JN Chg #2
SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID. 99-0002	Building 711
Survey Area. FF	Survey Unit N/A
Survey Unit Description. ROOF/EXTERIOR OF BUILDING 711 (COOLING TOWER)	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none">- Direct alpha contamination- Direct beta contamination- Removable alpha contamination- Removable beta contamination- 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 711
Survey Area: FF	Survey Unit N/A
Survey Unit Description: ROOF/EXTERIOR OF BUILDING 711 (COOLING TOWER)	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

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Pg superseded 01/18/00 JN Aug #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

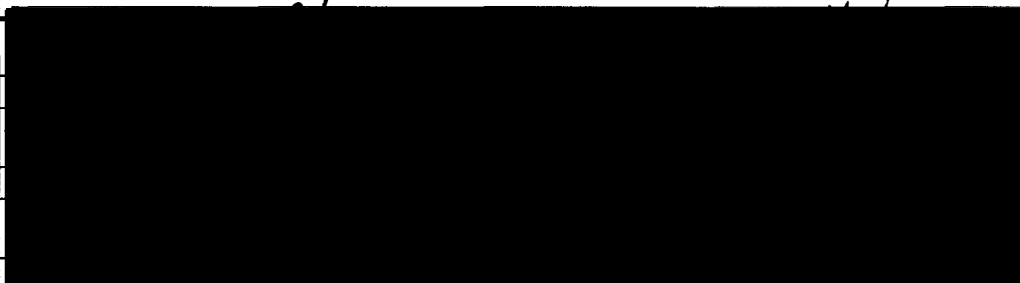
Package ID: 99-0002	Building: 707
Survey Area: FF	Survey Unit: N/A
Survey Unit Description: ROOF/EXTERIOR OF BUILDING 711 (COOLING TOWER)	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building: 707
Survey Area: FF	Survey Unit: N/A
Survey Unit Description: : ROOF/EXTERIOR OF BUILDING 711 (COOLING TOWER)	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 711 (EXTERIOR/ROOF)	
Survey Area: FF		Survey Unit N/A	
Survey Type Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys		1	db
Total Activity Surveys		1	db
Exposure Rate Surveys		NA	NA
Removable Surveys		1	db
Media Samples		NA	NA
Volumetric Samples		NA	NA
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys		1	db
Total Activity Surveys		1	db
Exposure Rate Surveys		NA	NA
Removable Surveys		NA 1	db
Media Samples		NA	NA
Volumetric Samples		NA	NA
Comments			
		5200	
		Date	
		5/2/00	
		Date	
		5/2/00	
		Date	

RADIATION MONITORING TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____
Model _____	Model _____	Model _____	Building _____
Serial # _____	Serial # _____	Serial # _____	Location* _____
Cal Due _____	Cal Due _____	Cal Due _____	Purpose _____
Bkg _____	Bkg _____	Bkg _____	RWP # _____
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____
Mfg. _____	Mfg. _____	Mfg. _____	Print name _____ Signature _____ Emp # _____
Model _____	Model _____	Model _____	RCT _____ / _____ / _____
Serial # _____	Serial # _____	Serial # _____	Print name _____ Signature _____ Emp # _____
Cal Due _____	Cal Due _____	Cal Due _____	
Bkg _____	Bkg _____	Bkg _____	
Efficiency _____	Efficiency _____	Efficiency _____	
MDA _____	MDA _____	MDA _____	

PRL # : _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1 _____	_____	_____	_____	26 _____	_____	_____	_____
2 _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33 _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12 _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

Date Reviewed: _____

RS Supervision: _____

Print Name _____

Signature _____

Emp # _____

742

410/466

FOR USE WITH THE CENTRAL TECHNOLOGY SUB

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE.

**SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07 02,
*Contamination Monitoring Requirements***

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>2307</u>
Cal Due <u>8-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>2-12-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.3 cpm</u>	Bkg <u>2 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>19.4%</u>
MDA <u>12.9 dpm</u>	MDA <u>13.9 cpm</u>	MDA <u>9.4 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NA</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>959</u>	Serial # <u>833</u>	Serial # <u></u>
Cal Due <u>7-19-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u></u>
Bkg <u>40 cpm</u>	Bkg <u>36 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>98.1 dpm</u>	MDA <u>93.7 dpm</u>	MDA <u>NA</u>

Survey Type Contamination

Building 711
 Location 711 Roof Survey Area FF
 Purpose Reconnaissance Level Characterization

RWP # NADate 5-1-00 Time 1400

RCT NA
 Print name / Signature / Emp #

Comments Roof / Exterior Walls < 2 meters Unbiased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Roof	0	36	18	16	Roof	3	24	18
2		6	48	36	17		0	-4	30
3		0	-12	36	18		3	60	36
4		3	40	36	19		0	16	-12
5		0	0	18	20	Roof	0	32	18
6		0	-24	18	21	Wall	0	-20	-12
7		0	40	12	22		3	-28	-12
8		0	12	54	23		0	-52	6
9		0	0	0	24		6	12	12
10		0	24	30	25		0	-32	0
11		0	36	42	26		0	0	18
12		3	-24	66	27		0	-8	48
13		0	4	30	28		0	4	-6
14		0	-40	36	29		0	4	0
15	Roof	3	-40	36	30	Wall	0	-12	-12

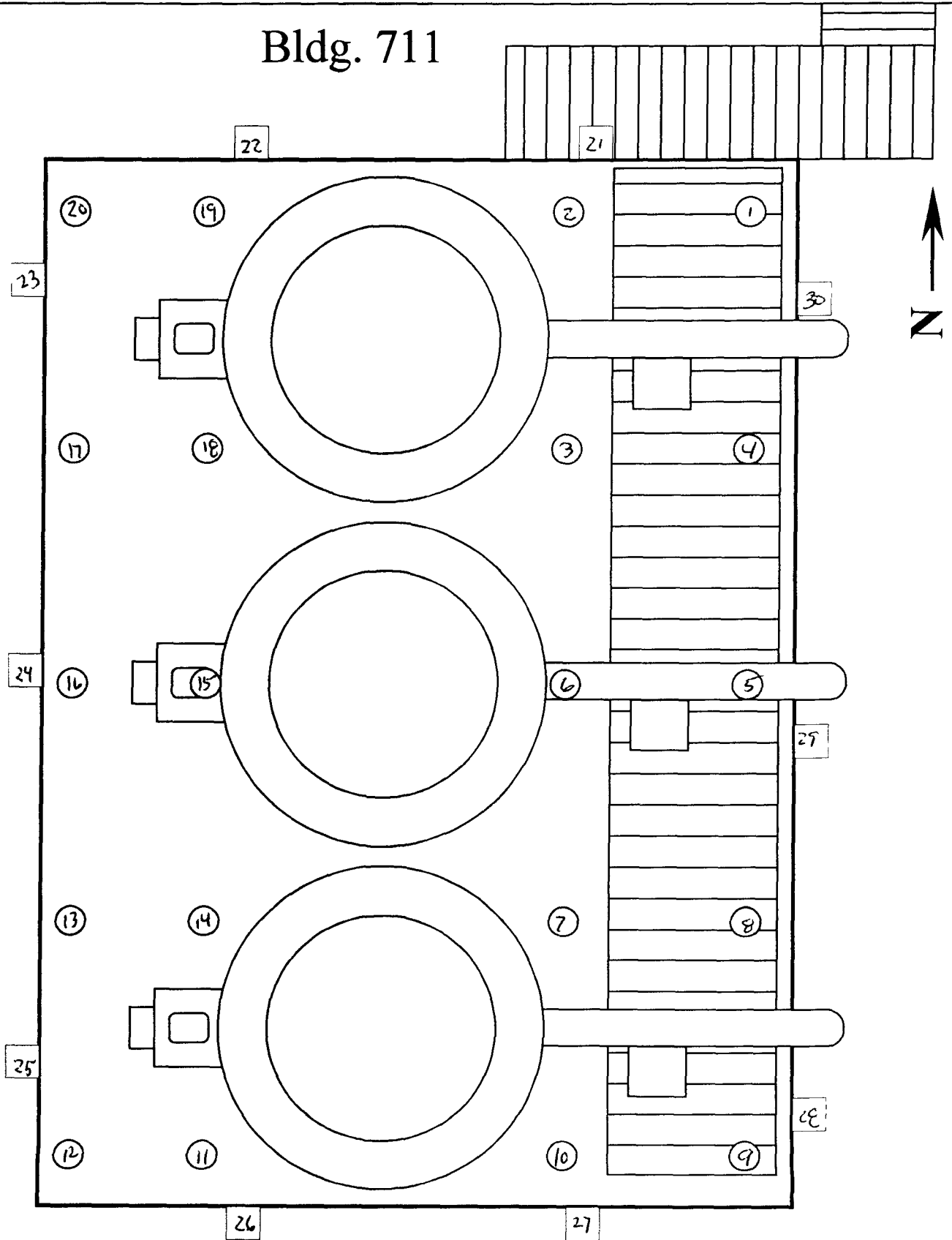
Date Reviewed 5-2-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Bldg. 711



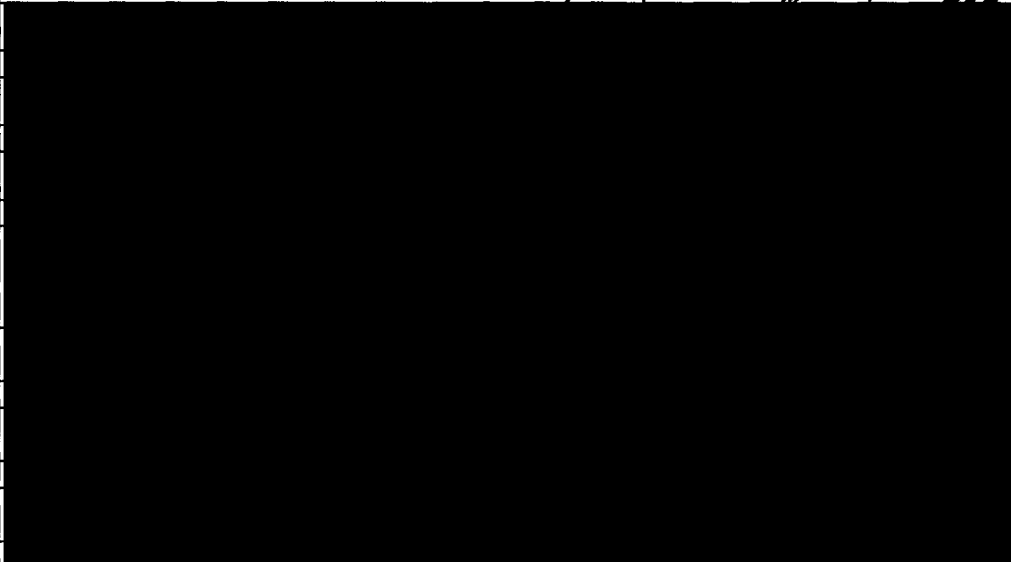
745

[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 718 (ROOF/EXT)		Type 1	
Survey Area GG		Survey Unit N/A		Area (m ²) per building	
Survey Unit Description ROOF/EXTERIOR OF BUILDING 718					
Survey Type			Classification		
RLC Survey X FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	0	0	1	0	30
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type.			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 718 (ROOF/EXTERIOR)	
Survey Area: GG	Survey Unit: N/A	
Survey Unit Description: Roof/exterior of Building 718		
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input checked="" type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/>		
Justification for Classification: N/A		
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads		
Special Safety Precautions: Notify security personnel prior to accessing elevated surfaces such as platforms, roofs, or stairs Access to roofs/structures areas may require additional controls Review RWP/facility requirements and surveys prior to entry		
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>		
Labeling Requirements: NONE		
Survey Package Implementation: N/A		
		11/12/99
		Date
		N/A
		Date
		11/11/99
		Date
		5/15/00
		Date
N/A		
Date		
5/15/00		
Date		

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building: 718 (ROOF/EXTERIOR)
Survey Area: GG		Survey Unit: N/A
Survey Unit Description: ROOF/EXTERIOR OF BUILDING 718		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	ROOF/EXTERIOR WALLS 30 uniformly distributed survey points distributed as follows - 10 on walls (< 2 meters) - 20 on roof of Building 718 FLOORS/WALLS < 2 meters N/A CEILINGS/WALLS > 2 meters N/A EQUIPMENT N/A	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building: 718 (ROOF/EXTERIOR)
Survey Area: GG		Survey Unit N/A
Survey Unit Description ROOF/EXTERIOR OF BUILDING 718		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	ROOF/EXTERIOR WALLS 30 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. FLOORS/WALLS < 2 meters N/A CEILINGS/WALLS > 2 meters N/A EQUIPMENT N/A	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	1 Sample from roof of Building 718	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Pg superseded 01/18/00 JG chg #2

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 718 (ROOF/EXTERIOR)
Survey Area: GG	Survey Unit: N/A
Survey Unit Description: ROOF/EXTERIOR OF BUILDING 718	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 718 (ROOF/EXTERIOR)
Survey Area: GG	Survey Unit N/A
Survey Unit Description: ROOF/EXTERIOR OF BUILDING 718	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media "</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

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Pg superseded 01/18/00 by Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

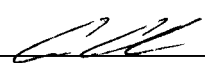
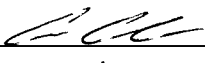

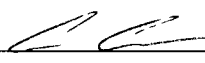
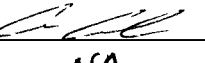
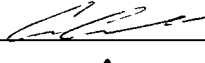

Package ID: 99-0002	Building 707
Survey Area: GG	Survey Unit N/A
Survey Unit Description. ROOF/EXTERIOR OF BUILDING 718	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02. Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering. Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: GG	Survey Unit N/A
Survey Unit Description: ROOF/EXTERIOR OF BUILDING 718	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Building 718 (ROOF/EXTERIOR)	
Survey Area: GG	Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>		
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys		KDM
Total Activity Surveys		KDM
Exposure Rate Surveys	NA	NA
Removable Surveys		KDM
Media Samples	NA ^①	NA ^①
Volumetric Samples	NA	NA
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		KDM
Total Activity Surveys		KDM
Exposure Rate Surveys	NA	NA
Removable Surveys		KDM
Media Samples	NA	NA
Volumetric Samples	NA	NA
Comments: ① no media sample, no paint at location identified in survey package 		
		5-8-00
		Date
		5/15/00
		Date
		5/15/00
		Date

ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____

Building _____

Location* _____

Purpose _____

RWP # _____

Date _____ Time _____

RCT _____ / _____ / _____

Print name _____ Signature _____ Emp # _____

RCT _____ / _____ / _____

Print name _____ Signature _____ Emp # _____

PRL #: _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1				26			
2				27			
3				28			
4				29			
5				30			
6				31			
7				32			
8				33			
9				34			
10				35			
11				36			
12				37			
13				38			
14				39			
15				40			
16				41			
17				42			
18				43			
19				44			
20				45			
21				46			
22				47			
23				48			
24				49			
25				50			

Date Reviewed: _____ RS Supervision: _____

Print Name _____ Signature _____ Emp # _____

757

419/466

ENVIRONMENTAL TECHNOLOGY SOLUTIONS

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE

**SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07 02,
*Contamination Monitoring Requirements.***

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>/</u>	Serial # <u>1233</u>
Cal Due <u>8-15-00</u>	Cal Due <u>/</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.5 cpm</u>	Bkg <u>/</u>	Bkg <u>30 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>.2063</u>
MDA <u>15.6 dpm</u>	MDA <u>/</u>	MDA <u>97 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>/</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>/</u>
Serial # <u>959</u>	Serial # <u>/</u>	Serial # <u>/</u>
Cal Due <u>7-19-00</u>	Cal Due <u>/</u>	Cal Due <u>/</u>
Bkg <u>42 cpm</u>	Bkg <u>/</u>	Bkg <u>/</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>/</u>
MDA <u>1003 dpm</u>	MDA <u>/</u>	MDA <u>/</u>

Survey Type Contamination

Building 718
 Location Roof/Exterior Survey Area GG
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 5-4-00 Time 2215

[Redacted Signature Area]

Print name / Signature / Emp #

Comments Roof/Exterior Walls < 2 meters Unbiased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	EXTERIOR WALLS < 2m	0	8	36	16	ROOF	0	-24	96
2		3	28	6	17		3	-20	120
3		0	-16	48	18		0	-36	138
4		3	60	36	19		0	-12	132
5		0	40	24	20		3	-20	150
6		3	12	30	21		3	-16	150
7		3	-4	42	22		9	-4	126
8		0	-20	12	23		0	12	180
9		3	-28	48	24		0	-8	120
10		0	-8	42	25		0	36	138
11	ROOF	6	-24	144	26		6	-40	108
12		3	-20	126	27		0	-28	186
13		0	-24	186	28		0	-12	96
14		0	0	174	29		0	-20	84
15		0	-4	156	30		3	8	90

Date Reviewed 5-8-00 RS Supervision

Print Name

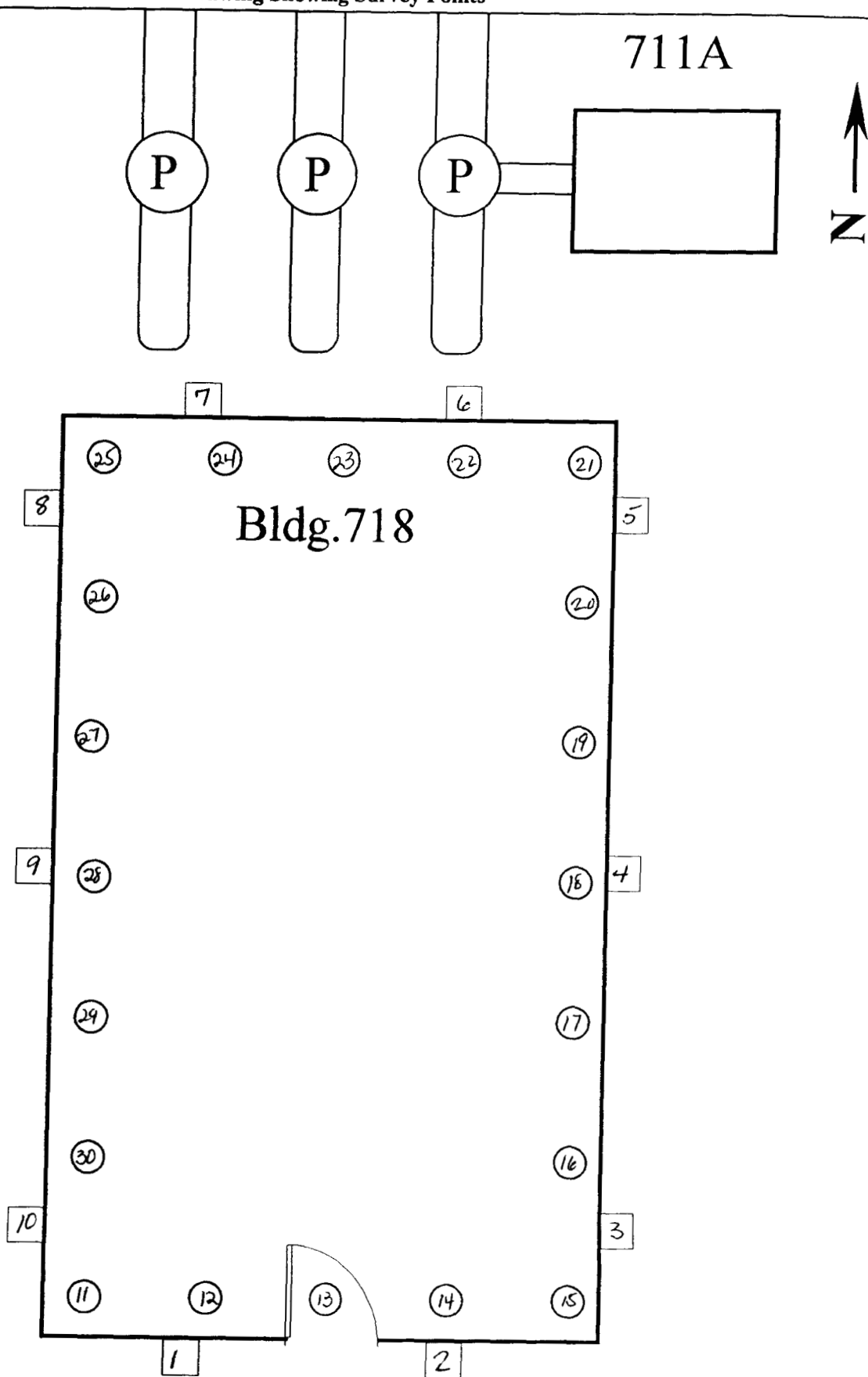
Signature

Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



760

3/8/00

BUILDING 707

SURVEY PACKAGE: HH LOCATION: 707T
GAMMA SCANNER

ATTENTION:

**THIS SURVEY PACKAGE WILL NOT BE PERFORMED PER
DIRECTION FROM G. KELLY (CLOSURE PROJECTS) DUE TO
CHANGE IN SCOPE TO 707 COMPLEX CHARACTERIZATION
PROJECT.**

James S. Jones
3/8/00


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[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID. 99-0002		Building 707T		Type 1	
Survey Area HH		Survey Unit N/A		Area (m ²) <2000	
Survey Unit Description Interior of Building 707T (tomographic gamma scanner)					
Survey Type			Classification		
RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	36	30	1	0	36
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002		Building: 707T	
Survey Area: HH		Survey Unit: N/A	
Survey Unit Description: INTERIOR OF BUILDING 707T (TOMOGRAPHIC GAMMA SCANNER)			
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input checked="" type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____			
Justification for Classification: N/A			
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads			
Special Safety Precautions: Access to roofs, stairs, or elevated structures external to buildings may require additional approvals from security personnel. Verify approvals prior to commencing surveys			
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>			
Labeling Requirements: NONE			
Survey Package Implementation: N/A			
		11/5/99	
		N/A	
		11/5/99	
RESS Manager Printed Name		Employee #	RESS Manager Signature
			Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707T
Survey Area: HH		Survey Unit N/A
Survey Unit Description: Interior of Building 707T (tomographic gamma scanner)		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>30 <u>unbiased</u> survey points uniformly distributed throughout building 707T</p> <p>6 <u>biased</u> survey points near</p> <ul style="list-style-type: none"> - Drum transport/movement/measurements areas - Source/material storage or staging areas <p>CEILINGS/WALLS > 2 meters</p> <p>30 <u>biased</u> surveys as determined by RCT</p> <p>EQUIPMENT</p> <p>30 <u>biased</u> survey points on equipment within Building 707T as determined by RCT</p>	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707T
Survey Area: HH		Survey Unit: N/A
Survey Unit Description: Interior of Building 707T (tomographic gamma scanner)		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 36 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 1 biased (paint) media sample taken near transport or staging areas	SEE NOTE 5 *** Media sampling may not be possible in this area due to floor configuration/construction media. Skip sample and document if sampling not feasible.
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Pg. superseded 01/18/00 *Mr. #2*

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707T
Survey Area: HH	Survey Unit N/A
Survey Unit Description Interior of Building 707T (tomographic gamma scanner)	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID 99-0002	Building 707T
Survey Area: HH	Survey Unit N/A
Survey Unit Description Interior of Building 707T (tomographic gamma scanner)	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media "</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

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Pg superseded 01/18/00 JF Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

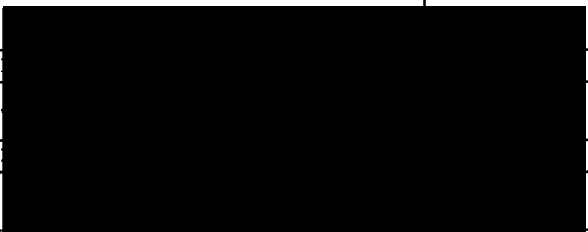
Package ID: 99-0002	Building 707
Survey Area: HH	Survey Unit N/A
Survey Unit Description: . Interior of Building 707T (tomographic gamma scanner)	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i e , non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e g , elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e g , indicate which direction is North) • Other appropriate information (e g , "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area. HH	Survey Unit N/A
Survey Unit Description Interior of Building 707T (tomographic gamma scanner)	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4- Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 707T	
Survey Area: HH		Survey Unit: N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys			
Total Activity Surveys			
Exposure Rate Surveys			
Removable Surveys			
Media Samples			
Volumetric Samples			
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys			
Total Activity Surveys			
Exposure Rate Surveys			
Removable Surveys			
Media Samples			
Volumetric Samples			
Comments.			
		RCT Supervisor Signature	Date
		Project RE Signature	Date
RESS Manager Printed Name		Employee #	RESS Manager Signature Date

ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____
Model _____	Model _____	Model _____	Building _____
Serial # _____	Serial # _____	Serial # _____	Location* _____
Cal Due _____	Cal Due _____	Cal Due _____	Purpose _____
Bkg _____	Bkg. _____	Bkg. _____	RWP # _____
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____
			Print name Signature Emp #
Mfg. _____	Mfg. _____	Mfg. _____	RCT _____ / _____ / _____
Model _____	Model _____	Model _____	Print name Signature Emp #
Serial # _____	Serial # _____	Serial # _____	
Cal Due _____	Cal Due _____	Cal Due _____	
Bkg _____	Bkg. _____	Bkg. _____	
Efficiency _____	Efficiency _____	Efficiency _____	
MDA _____	MDA _____	MDA _____	

PRL # : _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1				26			
2				27			
3				28			
4				29			
5				30			
6				31			
7				32			
8				33			
9				34			
10				35			
11				36			
12				37			
13				38			
14				39			
15				40			
16				41			
17				42			
18				43			
19				44			
20				45			
21				46			
22				47			
23				48			
24				49			
25				50			

Date Reviewed: _____ RS Supervision: _____ / _____ / _____

Print Name Signature Emp #

7773

428 / 466

ENTRAL TECHNOLOGY SUPPLY

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE.

**SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07 02,
*Contamination Monitoring Requirements.***

3/8/00

BUILDING 707

SURVEY PACKAGE: II LOCATION: 707T Exterior

ATTENTION:

**THIS SURVEY PACKAGE WILL NOT BE PERFORMED PER
DIRECTION FROM G. KELLY (CLOSURE PROJECTS) DUE TO
CHANGE IN SCOPE TO 707 COMPLEX CHARACTERIZATION
PROJECT.**

J. H. G. Jr.
3/8/00

SURVEY PACKAGE TRACKING FORM

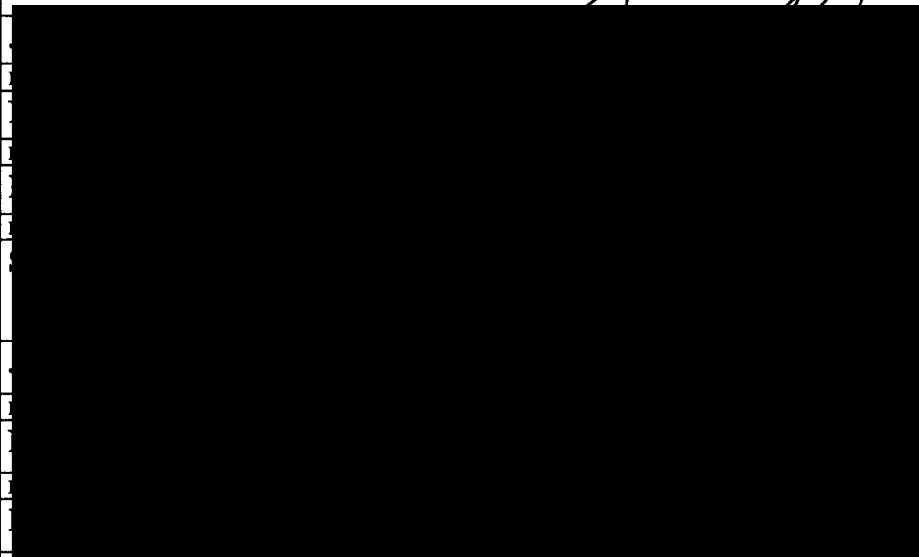
[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707T(ROOF/EXT)		Type 1	
Survey Area II		Survey Unit N/A		Area (m ²) per building	
Survey Unit Description ROOF/EXTERIOR OF BUILDING 707T (TOMOGRAPHIC GAMMA SCANNER)					
Survey Type			Classification		
RLC Survey X FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	0	0	1	0	30
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

mm

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707T (EXTERIOR/ROOF)	
Survey Area: II	Survey Unit: N/A	
Survey Unit Description: Roof/exterior of Building 707T (tomographic gamma scanner)		
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input checked="" type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____		
Justification for Classification: N/A		
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads		
Special Safety Precautions: Notify security personnel prior to accessing elevated surfaces such as platforms, roofs, or stairs. Access to roofs/structures areas may require additional controls. Review RWP/facility requirements and surveys prior to entry.		
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>		
Labeling Requirements: NONE		
Survey Package Implementation: N/A		
		11/5/99
		Date
		N/A
		Date
		11/5/99
		Date
		Date
		N/A
		Date
RESS Manager Printed Name _____ Employee # _____ RESS Manager Signature _____ Date _____		

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707T (ROOF/EXTERIOR)
Survey Area: II		Survey Unit: N/A
Survey Unit Description: ROOF/EXTERIOR OF BUILDING 707T (TOMOGRAPHIC GAMMA SCANNER)		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	ROOF/EXTERIOR WALLS	SEE NOTE 1
	30 uniformly distributed survey points distributed as follows	SEE NOTE 2
	- 10 on walls (< 2 meters)	SEE NOTE 3
	- 20 on roof of Building 707T	SEE NOTE 4
	FLOORS/WALLS < 2 meters N/A	
	CEILINGS/WALLS > 2 meters N/A	
	EQUIPMENT N/A	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707T
Survey Area: II		Survey Unit N/A
Survey Unit Description ROOF/EXTERIOR OF BUILDING 707T (TOMOGRAPHIC GAMMA SCANNER)		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	ROOF/EXTERIOR WALLS 30 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. FLOORS/WALLS < 2 meters N/A CEILINGS/WALLS > 2 meters N/A EQUIPMENT N/A	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	1 sample of roof media	SEE NOTE 5 ***Configuration/structure of roof media may not permit media sample
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Pg superseded 01/18/00 *Chg #2*
 SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707T
Survey Area: II	Survey Unit N/A
Survey Unit Description: ROOF/EXTERIOR OF BUILDING 707T (TOMOGRAPHIC GAMMA SCANNER)	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For each media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707T
Survey Area: II	Survey Unit N/A
Survey Unit Description: ROOF/EXTERIOR OF BUILDING 707T (TOMOGRAPHIC GAMMA SCANNER)	
Survey/Sampling Instructions	
<p>NOTE 1. Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media "</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

Pg 6A superseded 01/18/00 [signature] Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

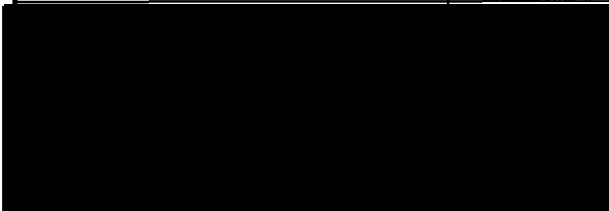
Package ID: 99-0002	Building: 707
Survey Area: II	Survey Unit: N/A
Survey Unit Description: : ROOF/EXTERIOR OF BUILDING 707T (TOMOGRAPHIC GAMMA SCANNER)	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i e , non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e g , elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e g , indicate which direction is North) • Other appropriate information (e g , "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: II	Survey Unit N/A
Survey Unit Description: • ROOF/EXTERIOR OF BUILDING 707T (TOMOGRAPHIC GAMMA SCANNER)	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 707T (ROOF/EXTERIOR)	
Survey Area: II		Survey Unit: N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys			
Total Activity Surveys			
Exposure Rate Surveys			
Removable Surveys			
Media Samples			
Volumetric Samples			
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys			
Total Activity Surveys			
Exposure Rate Surveys			
Removable Surveys			
Media Samples			
Volumetric Samples			
Comments			
		RCT Supervisor Signature	Date
		Project RE Signature	Date
		RESS Manager Signature	Date

ENVIRONMENTAL HEALTH PHYSICS SOCIETY

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE.

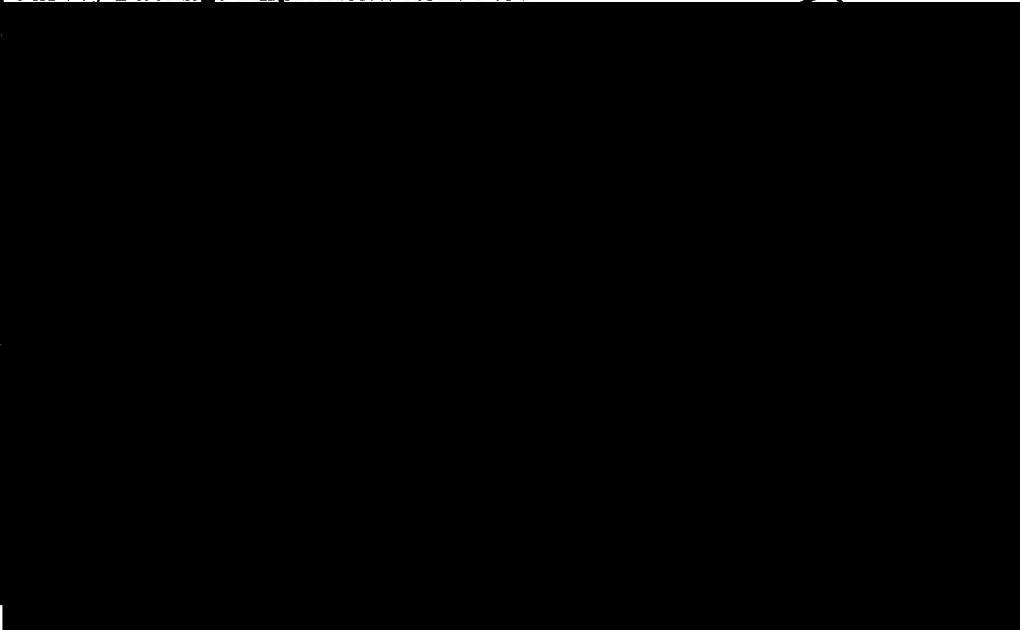
**SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07 02,
*Contamination Monitoring Requirements.***

[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 99-0002			Building: 731		Type 2	
Survey Area JJ			Survey Unit N/A		Area (m ²) per building	
Survey Unit Description ROOF/EXTERIOR OF BUILDING 731						
Survey Type. RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>				Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
30	5	0	1	0	35	
Building		Type		Survey Area		
Survey Unit			Area (m ²)			
Survey Unit Description						
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>				Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building		Type		Survey Area		
Survey Unit			Area (m ²)			
Survey Unit Description						
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>				Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building.		Type		Survey Area		
Survey Unit			Area (m ²)			
Survey Unit Description						
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>				Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 731 (EXTERIOR/ROOF)		
Survey Area: JJ	Survey Unit: N/A		
Survey Unit Description: Roof of Building 731			
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input checked="" type="checkbox"/> Type 3 <input type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____			
Justification for Classification: N/A			
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads			
Special Safety Precautions: Notify security personnel prior to accessing elevated surfaces such as platforms, roofs, or stairs. Access to roofs/structures areas may require additional controls. Review RWP/facility requirements and surveys prior to entry.			
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>			
Labeling Requirements: NONE			
Survey Package Implementation: N/A			
		Date	11/5/99
		Date	N/A
		Date	11/5/99
		Date	
		Date	5/15/00
		Date	N/A
		Date	
		Date	5/15/00
		Date	
		Date	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building: 731 (EXTERIOR/ROOF)
Survey Area: JJ		Survey Unit: N/A
Survey Unit Description: ROOF/EXTERIOR OF BUILDING 731		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	ROOF/EXTERIOR WALLS 30 uniformly distributed survey points distributed as follows - 10 on walls (< 2 meters) - 20 on roof of Building 731 5 biased survey points around piping/ventilation penetrations or as determined by RCT FLOORS/WALLS < 2 meters N/A CEILINGS/WALLS > 2 meters N/A EQUIPMENT N/A	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 731 (EXTERIOR/ROOF)
Survey Area: JJ		Survey Unit N/A
Survey Unit Description ROOF/EXTERIOR OF BUILDING 731		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	ROOF/EXTERIOR WALLS 35 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. FLOORS/WALLS < 2 meters N/A CEILINGS/WALLS > 2 meters N/A EQUIPMENT N/A	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	1 media sample from roof	SEE NOTE 5 ***Due to configuration/structure of roof, media sampling may not be possible
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Pg. 6 of 9 01/18/00 JN che #2

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 731 (EXTERIOR/ROOF)
Survey Area: JJ	Survey Unit N/A
Survey Unit Description: ROOF/EXTERIOR OF BUILDING 731	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures. • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 731 (EXTERIOR/ROOF)
Survey Area: JJ	Survey Unit: N/A
Survey Unit Description: ROOF/EXTERIOR OF BUILDING 731	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

Pg superseded 01/18/00 JPD Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

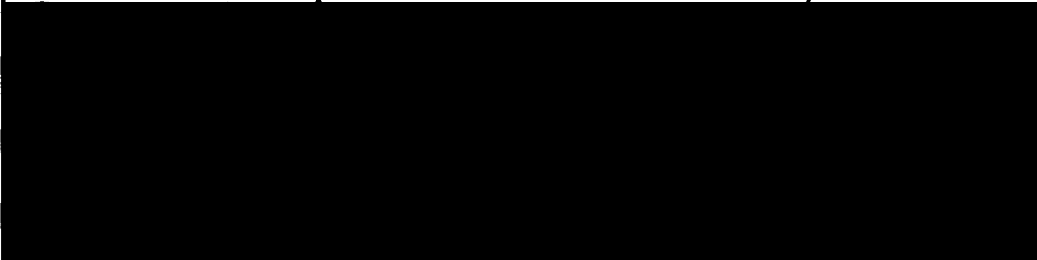
Package ID. 99-0002	Building 707
Survey Area JJ	Survey Unit N/A
Survey Unit Description: : ROOF/EXTERIOR OF BUILDING 731	
Survey/Sampling Instructions	
<p>SUPPLEMENTAL INSTRUCTIONS</p> <ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i e , non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e g , elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e g , indicate which direction is North) • Other appropriate information (e g , "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: JJ	Survey Unit N/A
Survey Unit Description : ROOF/EXTERIOR OF BUILDING 731	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 731 (EXTERIOR/ROOF)	
Survey Area: JJ		Survey Unit N/A	
Survey Type Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys		1	db
Total Activity Surveys		1	db
Exposure Rate Surveys		NA	NA
Removable Surveys		1	db
Media Samples		NA ^①	NA ^①
Volumetric Samples		NA	NA
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys		1	db
Total Activity Surveys		1	db
Exposure Rate Surveys		NA	NA
Removable Surveys		8	db
Media Samples		NA ^①	NA ^①
Volumetric Samples		NA	NA
Comments ① no media samples taken, no paint at locations identified in survey package 			
		5-2-00	
		Date	
		5/15/00	
		Date	
RESS Manager Printed Name		Employee #	RESS Manager Signature
			Date

ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____

Building _____

Location* _____

Purpose _____

RWP # _____

Date _____ Time _____

RCT _____ / _____ / _____

Print name _____ Signature _____ Emp # _____

RCT _____ / _____ / _____

Print name _____ Signature _____ Emp # _____

PRL # : _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1				26			
2				27			
3				28			
4				29			
5				30			
6				31			
7				32			
8				33			
9				34			
10				35			
11				36			
12				37			
13				38			
14				39			
15				40			
16				41			
17				42			
18				43			
19				44			
20				45			
21				46			
22				47			
23				48			
24				49			
25				50			

Date Reviewed: _____ RS Supervision: _____ / _____ / _____

Print Name _____ Signature _____ Emp # _____

800

446 / 466

VENTRAL TECHNOLOGY SOLUTIONS

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE

**SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02,
*Contamination Monitoring Requirements.***

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1270</u>	Serial # <u>1233</u>
Cal Due <u>8-15-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>60 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.63%</u>
MDA <u>82 dpm</u>	MDA <u>129 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>N/A</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u></u>
Bkg <u>38 cpm</u>	Bkg <u>43 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>95.9 dpm</u>	MDA <u>101.3 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 731
 Location Roof - Wall Survey Area JJ
 Purpose Reconnaissance Level Characterization

RWP # _____

Date 4-7-00 Time 1200

RCT _____

Print name / Signature / Emp #

Comments Roof / Exterior Walls < 2 meters Unbiased survey points
1 m² scans, 1 minute pats and swipes See map for locations

2 - backgrounds #1(1cpm) #2(4cpm)

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Roof	3	44	120	16	Wall	0	4	138
2	Roof	0	-40	108	17	Wall	3	16	42
3	Roof	3	64	66	18	Wall	0	-28	66
4	Roof	0	36	42	19	Wall	0	40	84
5	Roof	0	44	102	20	Wall	0	-12	78
6	Roof	9	-28	66	21	Wall	0	0	42
7	Roof	0	-12	90	22	Roof	0	-16	180
8	Roof	0	24	120	23	Roof	0	-44	216
9	Roof	0	0	78	24	Roof	3	12	138
10	Roof	0	56	132	25	Roof	0	16	48
11	Roof	6	40	48	26	Roof	0	0	144
12	Wall	0	12	72	27	Roof	0	-16	132
13	Wall	0	40	42	28	Roof	0	40	96
14	Wall	0	28	66	29	Roof	0	32	114
15	Wall	0	20	18	30	Roof	0	12	66

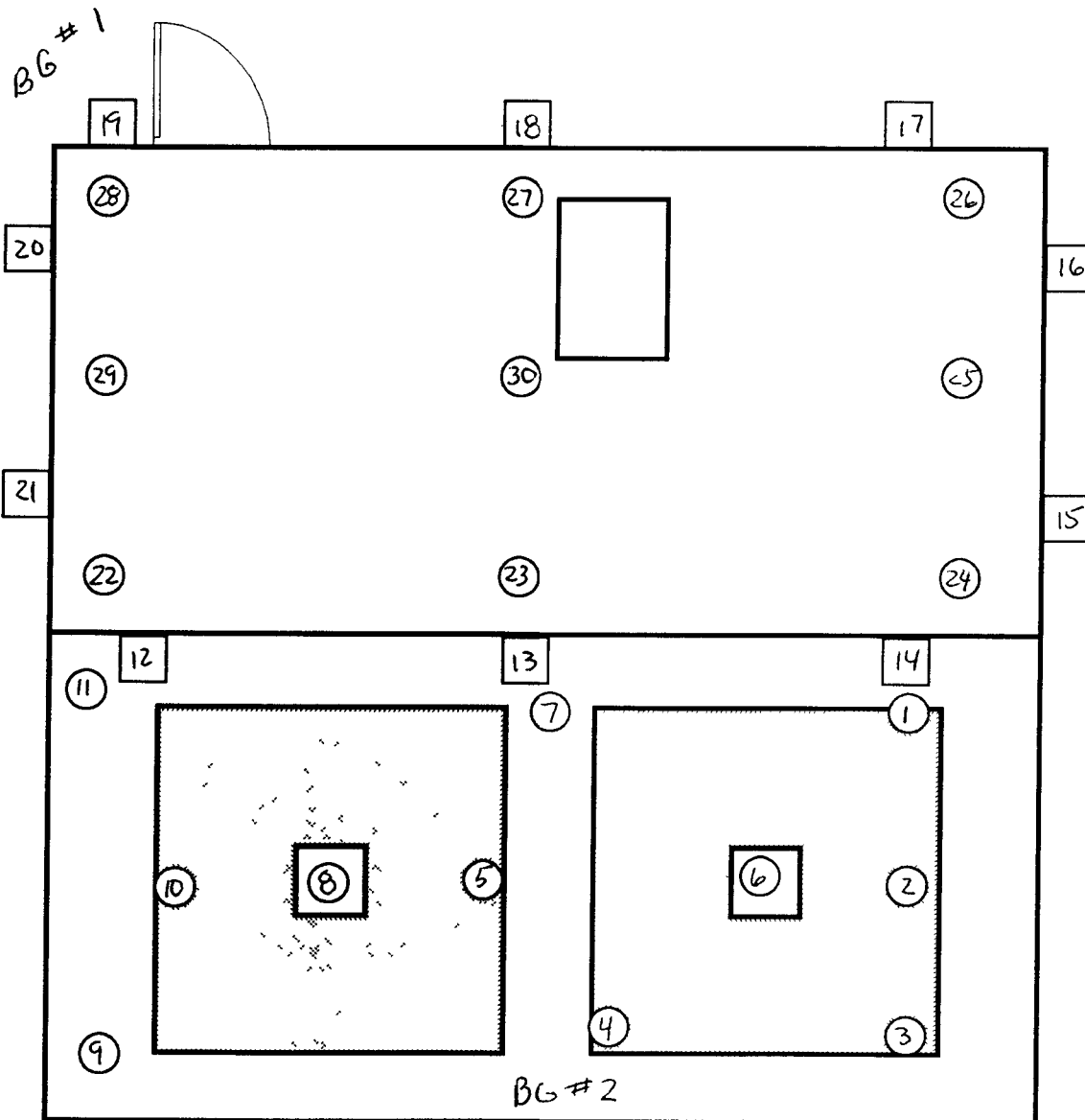
Date Reviewed 4-17-00 RS Supervision _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Bldg.731



Note This half is at ground level

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1270</u>	Serial # <u>1233</u>
Cal Due <u>8-15-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.0 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.63%</u>
MDA <u>8.2 dpm</u>	MDA <u>12.9 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u></u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>N/A</u>
Bkg <u>3.8 cpm</u>	Bkg <u>5.15 - 4.3 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>95.9 dpm</u>	MDA <u>101.3 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 731
 Location Roof / Wall Survey Area JJ
 Purpose Reconnaissance Level Characterization

RWP # _____

Date 4-7-00 Time 1500

RCT _____

Print name / Signature / Emp #

Comments Roof / Exterior Walls Biased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	under duct	0	-20	24	16				
2	Elect conduit	0	-12	60	17				
3	duct	6	20	60	18				
4	vent	0	-20	36	19				
5	Elect conduit	3	12	30	20				
6	END OF SURVEY				21				
7					22				
8					23				
9					24				
10					25				
11					26				
12					27				
13					28				
14					29				
15					30				

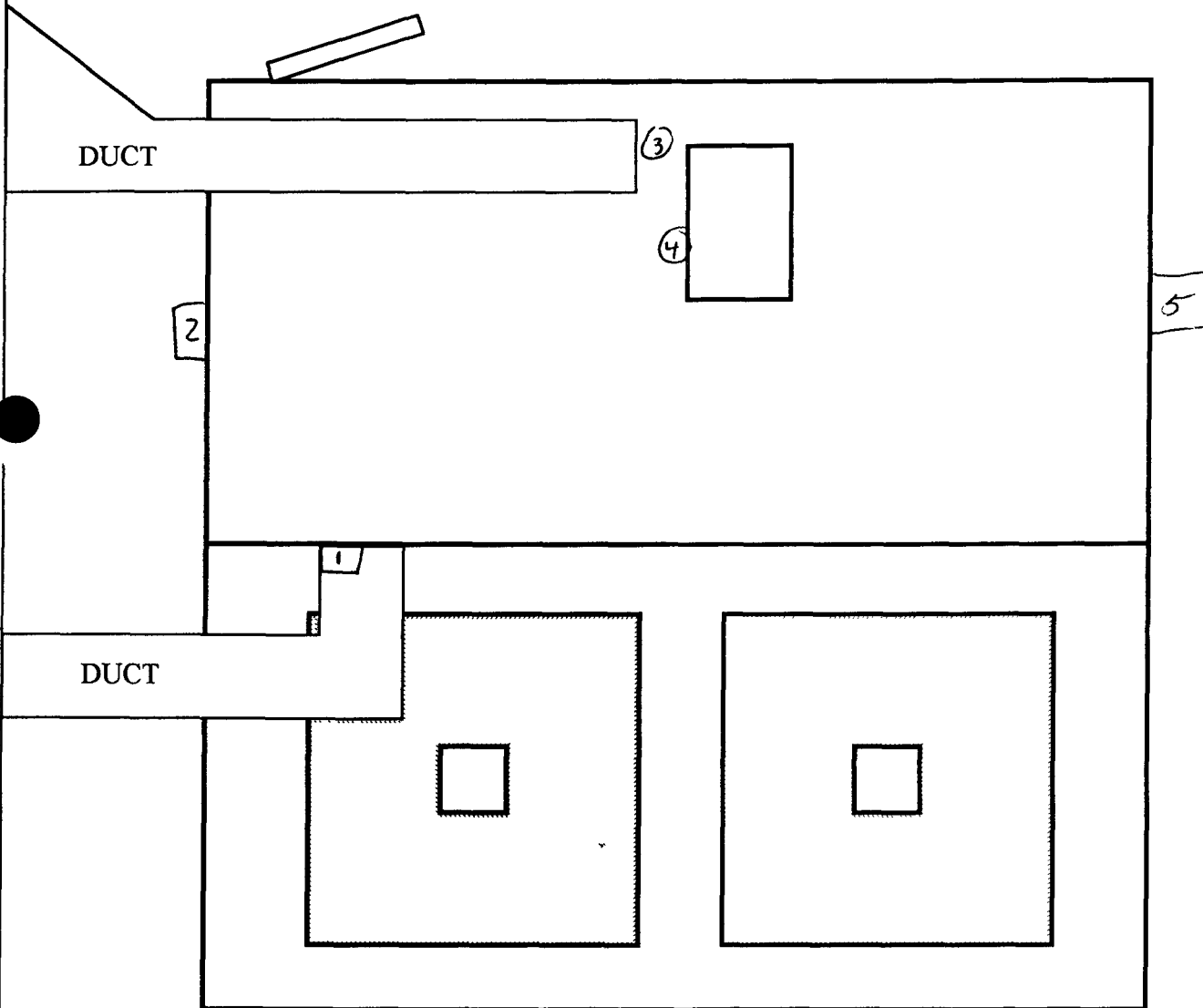
Date Reviewed 4-17-00 RS Supervision. _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Bldg.731



Note This half is at ground level

805

3/8/00

BUILDING 707

SURVEY PACKAGE: KK LOCATION: Valve vaults
VV-007/-008
INTERIOR

ATTENTION:

THIS SURVEY PACKAGE WILL NOT BE PERFORMED PER
DIRECTION FROM G. KELLY (CLOSURE PROJECTS) DUE TO
CHANGE IN SCOPE TO 707 COMPLEX CHARACTERIZATION
PROJECT.

[illegible]

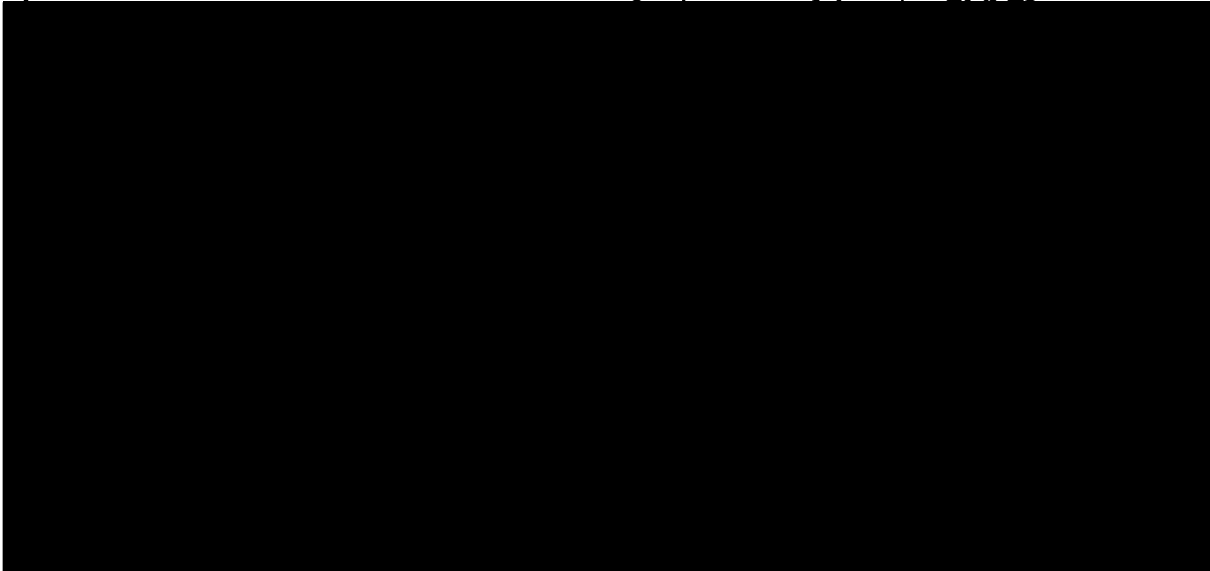
447/466

Rev
~~806~~ 807

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707 (VV-007/VV-008)		Type 3	
Survey Area KK		Survey Unit N/A		Area (m ²) 9	
Survey Unit Description INTERIOR OF VALVE VAULTS VV-007 AND VV-008 WEST OF BUILDING 707					
Survey Type			Classification		
RLC Survey X FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
32	40	30	2	0	42
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707 VALVE VAULTS (INTERIOR)
Survey Area: KK	Survey Unit: N/A
Survey Unit Description: INTERIOR OF VALVE VAULTS VV-007 AND VV-008 WEST OF BUILDING 707	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to roofs/structures may require additional safety measure, controls, and/or security requirements Make appropriate notifications prior to commencing surveys on roofs or similar structures Review RWP requirements and surveys prior to entry	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation:	
	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID. 99-0002		Building 707 VALVE VAULTS (INTERIOR)
Survey Area: KK		Survey Unit N/A
Survey Unit Description. INTERIOR OF VALVE VAULTS VV-007 AND VV-008 WEST OF BUILDING 707		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>32 <u>unbiased</u> survey points uniformly distributed on the interior of <u>each valve vault structure</u> as follows</p> <ul style="list-style-type: none"> - 3 survey points per wall per valve vault - 4 survey points per floor per valve vault <p>10 <u>biased</u> survey points (5 per valve vault) with emphasis on the following types of locations</p> <ul style="list-style-type: none"> - Areas of contained contamination or historical spills - Other areas of potential concern based on RCT/RE judgement/experience <p>CEILINGS/WALLS > 2 meters</p> <p>30 <u>biased</u> surveys (15 points per valve vault) with focus on following areas</p> <ul style="list-style-type: none"> - 3 points per wall per valve vault - 3 points per valve vault ceiling - Walls/ceilings behind/above process lines - Stained, discolored, or suspect areas - Areas around pipe or other penetrations 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707 VALVE VAULTS (INTERIOR)
Survey Area: KK		Survey Unit N/A
Survey Unit Description: INTERIOR OF VALVE VAULTS VV-007 AND VV-008 WEST OF BUILDING 707		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements (continued)	EQUIPMENT 30 <u>biased</u> survey points (15 per valve vault) on equipment within the valve vaults with focus on the following areas <ul style="list-style-type: none"> - Tanks/pumps/piping associated with process waste/liquid lines - On top of overhead piping (where locations are accessible/available) - Other areas of potential concern based on RCT judgement/experience 	
Surface Scanning	FLOORS/WALLS < 2 meters 42 1 m ² surface scans shall be taken at each location identified for surface activity measurements including exterior and interior survey points. Locations found above the DCGL shall be documented. CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 2 biased paint samples taken as follows <ul style="list-style-type: none"> - Within each valve vault on the floor or as designated by Radiological Engineering 	SEE NOTE 5 ** media samples may not be possible in this area due to configuration of floor structure. Skip those media samples which are not possible
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Pg. Suspended 01/18/00 JG Chg # 2

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707 VALVE VAULTS (INTERIOR)
Survey Area KK	Survey Unit N/A
Survey Unit Description: INTERIOR OF VALVE VAULTS VV-007 AND VV-008 WEST OF BUILDING 707	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID. 99-0002	Building 707 VALVE VAULTS (INTERIOR)
Survey Area. KK	Survey Unit. N/A
Survey Unit Description: INTERIOR OF VALVE VAULTS VV-007 AND VV-008 WEST OF BUILDING 707	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media "</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

Pg superseded 01/18/00 JF Aug #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)



Package ID: 99-0002	Building: 707
Survey Area: KK	Survey Unit: N/A
Survey Unit Description: : INTERIOR OF VALVE VAULTS VV-007 AND VV-008 WEST OF BUILDING 707	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02. Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and <u>in addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering. Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: KK	Survey Unit N/A
Survey Unit Description. : INTERIOR OF VALVE VAULTS VV-007 AND VV-008 WEST OF BUILDING 707	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 707 VALVE VAULTS (INTERIOR)	
Survey Area: KK		Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion	RCT Supervisor	PRE	
Scan Surveys			
Total Activity Surveys			
Exposure Rate Surveys			
Removable Surveys			
Media Samples			
Volumetric Samples			
All Surveys and Samples Accounted For	RCT Supervisor	PRE	
Scan Surveys			
Total Activity Surveys			
Exposure Rate Surveys			
Removable Surveys			
Media Samples			
Volumetric Samples			
Comments			
RCT Supervisor Printed Name		RCT Supervisor Signature	Date
			
		Project RE Signature	Date
RESS Manager Printed Name		RESS Manager Signature	Date
			

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____	Survey Type: _____
Model _____	Model _____	Model _____	Building: _____
Serial # _____	Serial # _____	Serial # _____	Location: _____
Cal Due _____	Cal Due _____	Cal Due _____	Purpose _____
Bkg. _____	Bkg. _____	Bkg. _____	RWP # _____
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____
MDA _____	MDA _____	MDA _____	RCT. _____ / _____ / _____
			Print name Signature Emp #
Mfg. _____	Mfg. _____	Mfg. _____	RCT _____ / _____ / _____
Model _____	Model _____	Model _____	Print name Signature Emp #
Serial # _____	Serial # _____	Serial # _____	
Cal Due _____	Cal Due _____	Cal Due _____	
Bkg. _____	Bkg. _____	Bkg. _____	
Efficiency _____	Efficiency _____	Efficiency _____	
MDA _____	MDA _____	MDA _____	

PRL #: _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1				26			
2				27			
3				28			
4				29			
5				30			
6				31			
7				32			
8				33			
9				34			
10				35			
11				36			
12				37			
13				38			
14				39			
15				40			
16				41			
17				42			
18				43			
19				44			
20				45			
21				46			
22				47			
23				48			
24				49			
25				50			

Date Reviewed: _____ RS Supervision: _____ / _____ / _____

Print Name Signature Emp #

818

455/466

ROCKY FLAT ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

VALVE VAULT VV-007 INTERIOR

**DENOTES UPPER
WALL**

NORTH WALL

WEST WALL

EAST WALL

FLOOR

SOUTH WALL

N

S

CEILING

819

Rev 05/98

@RAH

INSTRUMENT DATA

Mfg. _____ Mfg. _____ Mfg. _____
 Model _____ Model _____ Model _____
 Serial # _____ Serial # _____ Serial # _____
 Cal Due _____ Cal Due _____ Cal Due _____
 Bkg. _____ Bkg. _____ Bkg. _____
 Efficiency _____ Efficiency _____ Efficiency _____
 MDA _____ MDA _____ MDA _____

Mfg. _____ Mfg. _____ Mfg. _____
 Model _____ Model _____ Model _____
 Serial # _____ Serial # _____ Serial # _____
 Cal Due _____ Cal Due _____ Cal Due _____
 Bkg. _____ Bkg. _____ Bkg. _____
 Efficiency _____ Efficiency _____ Efficiency _____
 MDA _____ MDA _____ MDA _____

Survey Type: _____

Building: _____

Location: _____

Purpose: _____

RWP #: _____

Date: _____ Time: _____

RCT: _____ / _____ / _____
 Print name Signature Emp. #

RCT: _____ / _____ / _____
 Print name Signature Emp. #

PRL #: _____

Comments: _____

SURVEY RESULTS

	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1.	_____	_____	_____	_____	26	_____	_____	_____
2.	_____	_____	_____	_____	27	_____	_____	_____
3.	_____	_____	_____	_____	28	_____	_____	_____
4.	_____	_____	_____	_____	29	_____	_____	_____
5.	_____	_____	_____	_____	30	_____	_____	_____
6.	_____	_____	_____	_____	31	_____	_____	_____
7.	_____	_____	_____	_____	32	_____	_____	_____
8.	_____	_____	_____	_____	33.	_____	_____	_____
9.	_____	_____	_____	_____	34	_____	_____	_____
10.	_____	_____	_____	_____	35	_____	_____	_____
11.	_____	_____	_____	_____	36	_____	_____	_____
12.	_____	_____	_____	_____	37	_____	_____	_____
13.	_____	_____	_____	_____	38	_____	_____	_____
14.	_____	_____	_____	_____	39	_____	_____	_____
15.	_____	_____	_____	_____	40	_____	_____	_____
16.	_____	_____	_____	_____	41	_____	_____	_____
17.	_____	_____	_____	_____	42	_____	_____	_____
18.	_____	_____	_____	_____	43	_____	_____	_____
19.	_____	_____	_____	_____	44	_____	_____	_____
20.	_____	_____	_____	_____	45	_____	_____	_____
21.	_____	_____	_____	_____	46	_____	_____	_____
22.	_____	_____	_____	_____	47	_____	_____	_____
23.	_____	_____	_____	_____	48	_____	_____	_____
24.	_____	_____	_____	_____	49	_____	_____	_____
25.	_____	_____	_____	_____	50	_____	_____	_____

Date Reviewed: _____ RS Supervision: _____ / _____ / _____
 Print Name Signature Emp. #

820

456/466

MENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

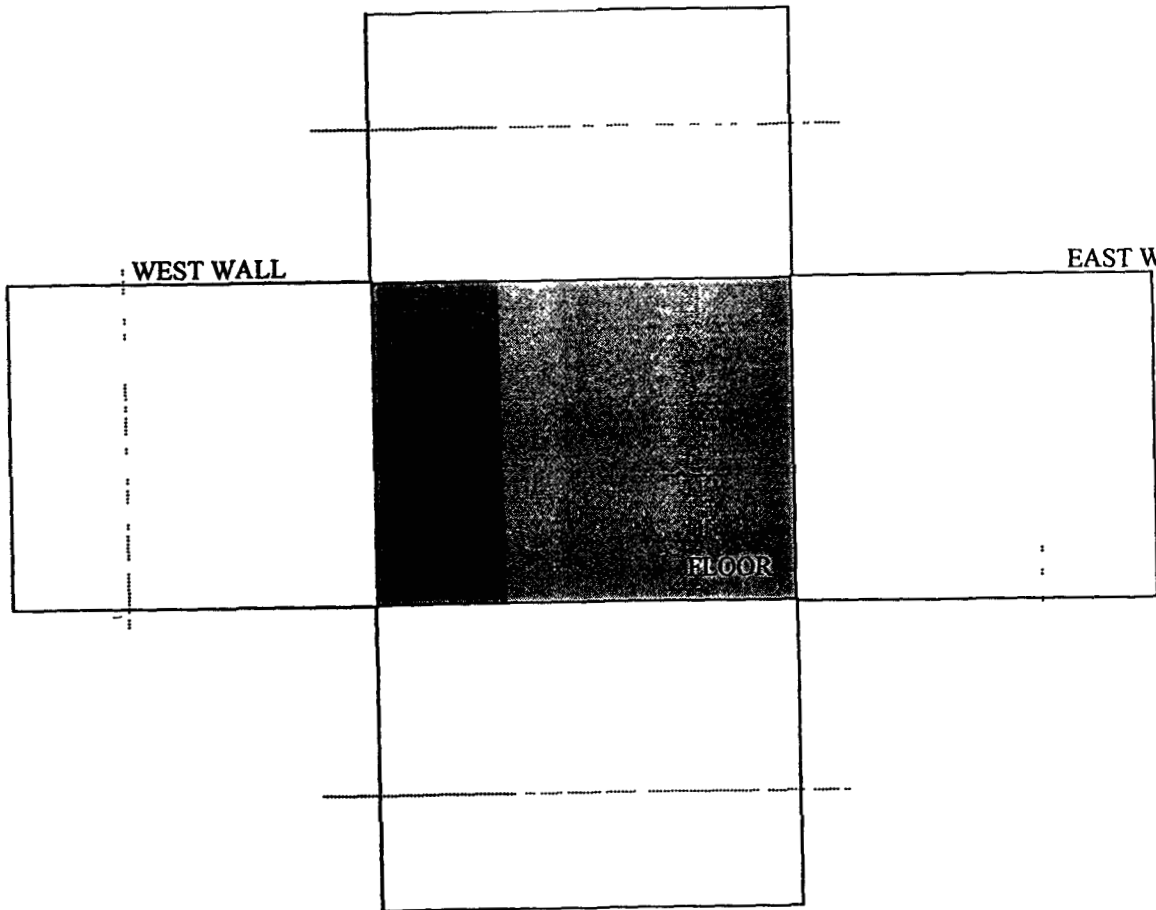
VALVE VAULT VV-008 INTERIOR

DENOTES UPPER
WALL

NORTH WALL

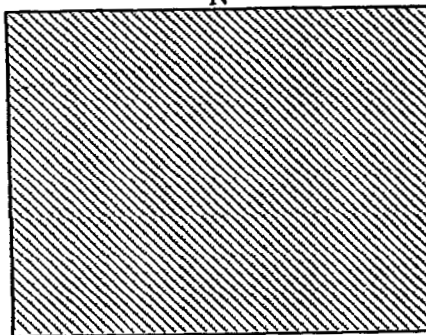
WEST WALL

EAST WALL



SOUTH WALL

N



CEILING

S

821

Rev 05/98

@RAH

3/8/00

BUILDING 707

SURVEY PACKAGE: LL LOCATION: VALUE VAULTS
VU-007/-008
EXTERIOR

ATTENTION:

**THIS SURVEY PACKAGE WILL NOT BE PERFORMED PER
DIRECTION FROM G. KELLY (CLOSURE PROJECTS) DUE TO
CHANGE IN SCOPE TO 707 COMPLEX CHARACTERIZATION
PROJECT.**

822

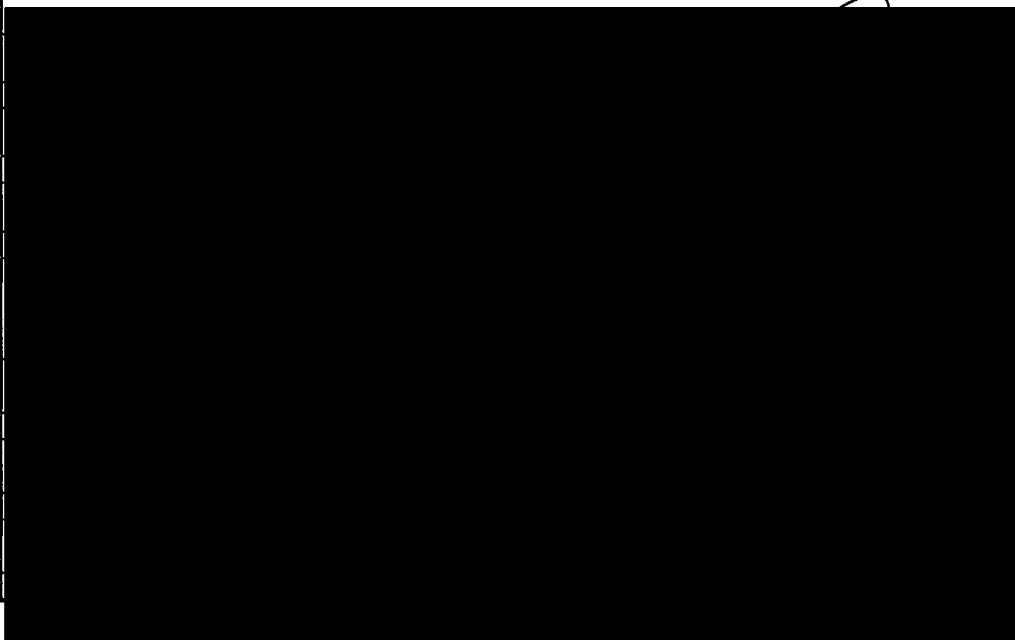
SURVEY PACKAGE TRACKING FORM

[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707 VALVE VAULTS (EXT)		Type 3	
Survey Area LL		Survey Unit N/A		Area (m²) 9	
Survey Unit Description ROOF AND EXTERIOR OF VALVE VAULTS VV-007 AND VV-008, WEST OF BUILDING 707					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
32	0	0	0	2	32
Building		Type		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707 VALVE VAULTS (EXTERIOR/ROOF)
Survey Area: LL	Survey Unit: N/A
Survey Unit Description: ROOF AND EXTERIOR OF VALVE VAULTS VV-007 AND VV-008, WEST OF BUILDING 707	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input checked="" type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to roofs/structures may require additional safety measure, controls, and/or security requirements. Make appropriate notifications prior to commencing surveys on roofs or similar structures. Review RWP requirements and surveys prior to entry.	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation:	
	11/15/99
	Date
	N/A
	Date
	11/15/99
	Date
	Date
	N/A
Date	
Date	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID. 99-0002		Building 707 VALVE VAULTS (EXTERIOR/ROOF)
Survey Area. LL		Survey Unit N/A
Survey Unit Description: ROOF AND EXTERIOR OF VALVE VAULTS VV-007 AND VV-008, WEST OF BUILDING 707		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters N/A</p> <p>CEILINGS/WALLS > 2 meters N/A</p> <p>ROOF/EXTERIOR</p> <p>32 <u>unbiased</u> survey points uniformly distributed around the exteriors of <u>each valve vault</u> structure as follows</p> <ul style="list-style-type: none"> - 3 survey points per exterior wall (total of 12 survey points per valve vault) - 4 survey points on roof 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002		Building 707 VALVE VAULTS (EXTERIOR/ROOF)
Survey Area: LL		Survey Unit N/A
Survey Unit Description ROOF AND EXTERIOR OF VALVE VAULTS VV-007 AND VV-008, WEST OF BUILDING 707		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 32 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NONE	
Volumetric Samples	Total of 2 coupon samples taken from roof of each valve vault structure	
Isotopic Gamma Scans	NONE	

Pg superseded 01/18/00 JF chg #2

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707 VALVE VAULTS (EXTERIOR/ROOF)
Survey Area: LL	Survey Unit: N/A
Survey Unit Description: ROOF AND EXTERIOR OF VALVE VAULTS VV-007 AND VV-008, WEST OF BUILDING 707	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Direct beta contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha then beta/gamma contamination <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707 VALVE VAULTS (EXTERIOR/ROOF)
Survey Area: LL	Survey Unit N/A
Survey Unit Description: ROOF AND EXTERIOR OF VALVE VAULTS VV-007 AND VV-008, WEST OF BUILDING 707	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media "</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

Pg superseded 01/18/00 JN Chg #3

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)


Package ID: 99-0002	Building 707
Survey Area LL	Survey Unit N/A
Survey Unit Description: • ROOF AND EXTERIOR OF VALVE VAULTS VV-007 AND VV-008, WEST OF BUILDING 707	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i e , non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e g , elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e g , indicate which direction is North) • Other appropriate information (e g , "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc) 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: LL	Survey Unit N/A
Survey Unit Description: : ROOF AND EXTERIOR OF VALVE VAULTS VV-007 AND VV-008, WEST OF BUILDING 707	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS:	
<ol style="list-style-type: none"> 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected 3 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location The "elevated reading" PAT measurement will be documented All other measurements will be collected at the elevated reading location as well 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected 7 Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002		Building 707 VALVE VAULTS (EXTERIOR/ROOF)	
Survey Area: LL		Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion	RCT Supervisor	PRE	
Scan Surveys			
Total Activity Surveys			
Exposure Rate Surveys			
Removable Surveys			
Media Samples			
Volumetric Samples			
All Surveys and Samples Accounted For	RCT Supervisor	PRE	
Scan Surveys			
Total Activity Surveys			
Exposure Rate Surveys			
Removable Surveys			
Media Samples			
Volumetric Samples			
Comments			
		RCT Supervisor Signature	Date
		Project RE Signature	Date
RESS Manager Printed Name	Employee #	RESS Manager Signature	Date

NUCLEAR ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg _____	Mfg _____	Mfg _____	Survey Type: _____
Model _____	Model _____	Model _____	Building _____
Serial # _____	Serial # _____	Serial # _____	Location _____
Cal Due _____	Cal Due _____	Cal Due _____	Purpose _____
Bkg _____	Bkg. _____	Bkg _____	RWP # _____
Efficiency _____	Efficiency _____	Efficiency _____	Date _____ Time _____
MDA _____	MDA _____	MDA _____	RCT _____ / _____ / _____
			Print name Signature Emp #
Mfg _____	Mfg. _____	Mfg _____	RCT _____ / _____ / _____
Model _____	Model _____	Model _____	Print name Signature Emp #
Serial # _____	Serial # _____	Serial # _____	
*Cal Due _____	Cal Due _____	Cal Due _____	
Bkg _____	Bkg _____	Bkg _____	
Efficiency _____	Efficiency _____	Efficiency _____	
MDA _____	MDA _____	MDA _____	

PRL # : _____

Comments _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1				26			
2				27			
3				28			
4				29			
5				30			
6				31			
7				32			
8				33			
9				34			
10				35			
11				36			
12				37			
13				38			
14				39			
15				40			
16				41			
17				42			
18				43			
19				44			
20				45			
21				46			
22				47			
23				48			
24				49			
25				50			

Date Reviewed: _____ RS Supervision: _____ / _____ / _____

Print Name Signature Emp #

834

465/464

ROCKY FLAT IRON ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

VALVE VAULT VV-007 EXTERIOR

NORTH WALL EXTERIOR

WEST WALL EXTERIOR

EAST WALL EXTERIOR

ROOF

SOUTH WALL EXTERIOR

835

INSTRUMENT DATA

Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg. _____	Mfg. _____	Mfg. _____
Model _____	Model _____	Model _____
Serial # _____	Serial # _____	Serial # _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg. _____	Bkg. _____	Bkg. _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type: _____		
Building: _____		
Location: _____		
Purpose: _____		
RWP #: _____		
Date: _____ Time: _____		
RCT _____	/	/
Print name	Signature	Emp. #
RCT _____	/	/
Print name	Signature	Emp. #

PRL #: _____
Comments: _____

SURVEY RESULTS

REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1 _____	_____	_____	_____	26 _____	_____	_____	_____
2. _____	_____	_____	_____	27 _____	_____	_____	_____
3 _____	_____	_____	_____	28 _____	_____	_____	_____
4 _____	_____	_____	_____	29 _____	_____	_____	_____
5 _____	_____	_____	_____	30 _____	_____	_____	_____
6 _____	_____	_____	_____	31 _____	_____	_____	_____
7 _____	_____	_____	_____	32 _____	_____	_____	_____
8 _____	_____	_____	_____	33. _____	_____	_____	_____
9 _____	_____	_____	_____	34 _____	_____	_____	_____
10 _____	_____	_____	_____	35 _____	_____	_____	_____
11 _____	_____	_____	_____	36 _____	_____	_____	_____
12. _____	_____	_____	_____	37 _____	_____	_____	_____
13 _____	_____	_____	_____	38 _____	_____	_____	_____
14 _____	_____	_____	_____	39 _____	_____	_____	_____
15 _____	_____	_____	_____	40 _____	_____	_____	_____
16 _____	_____	_____	_____	41 _____	_____	_____	_____
17 _____	_____	_____	_____	42 _____	_____	_____	_____
18 _____	_____	_____	_____	43 _____	_____	_____	_____
19 _____	_____	_____	_____	44 _____	_____	_____	_____
20 _____	_____	_____	_____	45 _____	_____	_____	_____
21 _____	_____	_____	_____	46 _____	_____	_____	_____
22 _____	_____	_____	_____	47 _____	_____	_____	_____
23 _____	_____	_____	_____	48 _____	_____	_____	_____
24 _____	_____	_____	_____	49 _____	_____	_____	_____
25 _____	_____	_____	_____	50 _____	_____	_____	_____

Date Reviewed: _____ RS Supervision: _____ / _____
Print Name Signature Emp #

466/466

ROCKY FLAT ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

VALVE VAULT VV-008 EXTERIOR

NORTH WALL EXTERIOR

WEST WALL EXTERIOR

EAST WALL EXTERIOR

ROOF

SOUTH WALL EXTERIOR

Survey Area: 707 Cluster	Survey Unit: N/A	Building N/A
Survey Unit Description Characterization Package for B-707 Cluster ATTACHMENT 1		

Data Quality Objectives:

This section defines the DQOs for reconnaissance level characterization (RLC) of the B-707 cluster buildings and structures

1 The Problem

The problem involves characterizing the nature, and extent of radiological and hazardous substance contamination in the B-707 cluster buildings and structures in order to 1) evaluate required extent/methods of disposition, 2) estimate approximate volumes of sanitary, low-level (LLW), low-level mixed, transuranic (TRU), transuranic-mixed, TSCA, asbestos, and RCRA waste generated during the D&D process, and 3) provide input to the design of in-process and pre-demolition (final) survey characterization

2.2 The Decision

The critical decision is estimating the inventories of the different categories of waste generated during D&D of the B-707 cluster buildings and structures. Characterization data evaluation will involve assessing if enough validated data exist to adequately describe the nature and extent of contamination or if additional data are necessary

2.3 Inputs to the Decision

The inputs to the decision include the reconnaissance level characterization (RLC) data and information generated from previous characterization activities (e.g., historical site assessment, scoping surveys, etc.), as well as the applicable action levels, unrestricted release criteria, transportation requirements, waste management regulations, pollution prevention/waste minimization criteria, ALARA, and WAC

RLC data to be collected include

- radiological surveys of all buildings and structures,
- sampling of paint chips from floors of selected buildings for isotopic analysis,
- core sampling of concrete floors in B-707 for RCRA metals TCLP analysis,
- smear sampling for beryllium in selected areas of B-707,
- asbestos inspection and sampling

2.4 Decision Boundaries

The decision boundaries include the spatial confines of the survey areas within the B-707 cluster buildings and structures as described in detail in this Characterization Package

2.5 Decision Rules

If process knowledge/history supports the premise that no radioactive contamination is present, the related area and/or volume of material is considered sanitary waste or may be free-released

If any radiological survey/scan measurement exceeds the surface contamination thresholds provided in DOE Order 5400.5 and the RFETS Radiological Control Manual, the related area or volume of material must be remediated or disposed of as radiological or mixed waste

If all radiological survey/scan measurements are below the surface contamination thresholds provided in DOE Order 5400.5 (Radiation Protection of the Public and Environment) and the RFETS Radiological Control Manual, the related area or volume of material is considered sanitary waste or may be free-released

Survey Area: 707 Cluster

Survey Unit: N/A

Building: N/A

Survey Unit Description

Characterization Package for B-707 Cluster **ATTACHMENT 1**

If any radiological sample measurement (or disposal unit volume) exceeds 100 nanocuries per gram of transuranic material, the associated volume must be disposed of as transuranic (TRU) waste

RCRA Constituents

If the waste is mixed with or contains a listed hazardous waste, or if the waste exhibits a characteristic of a hazardous waste, then the waste is considered RCRA-regulated hazardous waste in accordance with 6 CCR 1007-3, Parts 261 and 268

CERCLA Hazardous Substances

40 CFR 302.4 lists hazardous substances and reportable quantities that must be reported to the waste disposal facilities

Beryllium

If surface concentrations of beryllium are equal to or greater than $0.2 \text{ ug}/100 \text{ cm}^2$, the material is considered beryllium contaminated per the Occupational Safety and Industrial Hygiene Program Manual, Chapter 28, Chronic Beryllium Disease Prevention Program. If the concentrations are below $0.2 \text{ ug}/100 \text{ cm}^2$, the material is considered non-beryllium contaminated

If detectable beryllium contamination can be shown through process knowledge to consist of beryllium powder (P015 under RCRA), then the material is considered RCRA waste and subject to treatment standards under 40 CFR 268.40

PCBs

Material/media potentially contaminated with PCBs will be categorized per 40 CFR 761. If material meets the definition of PCB Bulk Product Waste, it may be disposed of at a facility that is permitted, licensed, or registered by a State to manage municipal solid waste subject to 40 CFR 258, or non-municipal, non-hazardous waste subject to 40 CFR 257.5 through 257.30. For most bulk product wastes, implementing this strategy precludes the need for PCB characterization prior to or during facility disposition, as long as restrictions outlined in 40 CFR 761.62 regarding their disposal are met. However, notification to the disposal facility is required at least 15 days in advance of shipping wastes to the facility if that disposal facility does not possess a commercial PCB storage or disposal approval.

Management strategy for PCB remediation waste will be determined on a case-by-case basis. If PCB contamination is suspected, or if a PCB spill is discovered that has not been cleaned up, the area will be treated as directed by the most recent versions of 40 CFR 761 through 766, the RFETS Polychlorinated Biphenyls Management Plan (PRO-673-EWQA-1.5), and the WSRIC standards. For each planned cleanup, PCB regulations under TSCA will be evaluated as potentially applicable or relevant and appropriate requirements (ARARs), including the disposal options for PCB remediation waste listed under 40 CFR 761.61

Asbestos

In accordance with 40 CFR 763 and 5 CCR 1001-10, if any one sample of a sample set representing a homogeneous medium results in a positive detection (i.e., $>1\%$ by volume), then material is considered ACM, otherwise the material is considered non-ACM.

Survey Area: 707 Cluster

Survey Unit: N/A

Building N/A

Survey Unit Description

Characterization Package for B-707 Cluster ATTACHMENT 1

2 6 Tolerable Limits on Decision Errors

Acceptable false positive and negative errors generally range from 1% to 10%. Other limits may be used, if agreed to by the D&D Projects and Construction Organization, the Project Manager, DOE and the LRA. Decision error does not apply to asbestos sample sets per 40 CFR 763. Results are compared with the action levels on a sample-by-sample basis.

Sampling design error for radiological sampling will be controlled by requiring a minimum number of uniformly distributed (n=30) and biased surveys (n=10) to be performed in each survey area. In addition, surface area size limits are assigned for survey areas based on contamination potential.

2 7 Optimization of Plan Design

The following criteria provide potential areas for optimization of the RLCP:

- If additional data (radiological, RCRA, TSCA, and asbestos) are not required to make decisions, then RLC surveys/sampling are not required.
- If RCRA, TSCA or asbestos survey/samples are required for materials, media, equipment and interior and exterior building surfaces, refer to the DDCP, Section 6.0.

If radiological survey/samples are required for materials, media, equipment and interior and exterior building surfaces, then the following requirements apply:

- A minimum number of uniformly distributed and biased measurements (refer to Appendix A) must be collected.
- A minimum number of biased samples must be collected (if surface media or volumetric contamination are suspect).

Radiological field measurement methods and instrumentation will be performed in accordance with approved RFETS site procedures and this document.

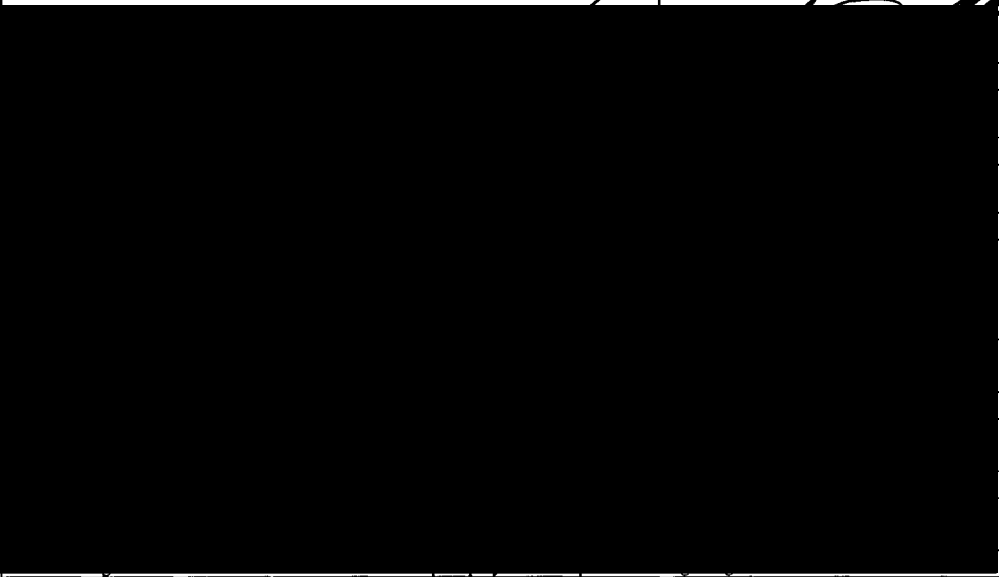
Radiological sampling and preparation for laboratory measurements will be performed in accordance with approved RFETS site procedures and this document.

[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 2000-0002		Building: (707) 778 INTERIOR EAST		Type 2	
Survey Area: A		Survey Unit: N/A		Area (m²) 1366	
Survey Unit Description INTERIOR OF BUILDING 778 (EAST NON-RAD) AREA EXTENDS FROM EAST END OF BUILDING TO COLUMN 8 (COLUMN 8 IS LOCATED JUST WEST OF 707 MAA GUARD VESTIBULE THIS AREA IS NOT RADIOLOGICALLY POSTED)					
Survey Type			Classification		
RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
45	21	30	0	0	55
Building:		Type		Survey Area	
Survey Unit:			Area (m²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type.		Survey Area	
Survey Unit.			Area (m²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type.		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 2000-0002	Building: (707) 778 INTERIOR EAST
Survey Area: A	Survey Unit: N/A
Survey Unit Description: INTERIOR OF BUILDING 778 (EAST NON-RAD) AREA EXTENDS FROM EAST END OF BUILDING TO COLUMN 8 (COLUMN 8 IS LOCATED JUST WEST OF 707 MAA GUARD VESTIBULE THIS AREA IS NOT RADIOLOGICALLY POSTED)	
Building Information:	
Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/>	
Building Type Type 1 <input type="checkbox"/> Type 2 <input checked="" type="checkbox"/> Type 3 <input type="checkbox"/>	
Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>	
Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead, outdoor, or elevated areas may require additional controls or approvals from security. Assure that appropriate notifications have been made	
Isolation Controls:	
Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation:	
	Date 3/7/00
	N/A
	Date
	3/8/00
	Date
	5-2-00
	Date
	N/A
	Date
8/2/00	
Date	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID 2000-0002		Building (707) 778 INTERIOR EAST
Survey Area: A		Survey Unit N/A
Survey Unit Description. INTERIOR OF BUILDING 778 (EAST NON-RAD) AREA EXTENDS FROM EAST END OF BUILDING TO COLUMN 8 (COLUMN 8 IS LOCATED JUST WEST OF 707 MAA GUARD VESTIBULE THIS AREA IS NOT RADIOLOGICALLY POSTED)		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>45 <u>uniformly distributed</u> survey points as follows</p> <ul style="list-style-type: none"> - 3 points total per "column section" with 1 point on walls, 2 points on floor alternating wall points between North and South half of rooms (45 points total for ~15 column sections) <p>(NOTES Column spacing is approximately every 20 feet Where carpeting is present on floors and cannot be removed for surveys, take additional wall surveys in lieu of floor surveys)</p> <p>10 <u>biased</u> survey points at areas such as</p> <ul style="list-style-type: none"> - floor drains - Areas that have a higher likelihood of contamination based on history/past use and based upon RCT judgement <p>CEILINGS/WALLS > 2 meters</p> <p>11 <u>biased</u> surveys of ceilings and walls > 2 meters as follows</p> <ul style="list-style-type: none"> - 1 point on walls > 2 meters in every other (alternating) column sections (8 points total) - 3 points on ceiling tiles <p>EQUIPMENT</p> <p>30 <u>biased</u> survey points on fixed equipment throughout area</p>	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 2000-0002		Building (707) 778 INTERIOR EAST
Survey Area. A		Survey Unit N/A
Survey Unit Description: INTERIOR OF BUILDING 778 (EAST NON-RAD) AREA EXTENDS FROM EAST END OF BUILDING TO COLUMN 8 (COLUMN 8 IS LOCATED JUST WEST OF 707 MAA GUARD VESTIBULE THIS AREA IS NOT RADIOLOGICALLY POSTED)		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 55 l m ² surface scans shall be taken at each location identified for surface activity measurements Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Due to floor configuration tile/linoleum, no media samples to be taken in this survey area	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 2000-0002	Building (707) 778 INTERIOR EAST
Survey Area: A	Survey Unit N/A
Survey Unit Description: INTERIOR OF BUILDING 778 (EAST NON-RAD) AREA EXTENDS FROM EAST END OF BUILDING TO COLUMN 8 (COLUMN 8 IS LOCATED JUST WEST OF 707 MAA GUARD VESTIBULE THIS AREA IS NOT RADIOLOGICALLY POSTED)	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none">- Direct alpha contamination- Removable alpha contamination- Removable beta contamination- 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 2000-0002	Building (707) 778 INTERIOR EAST
Survey Area: A	Survey Unit: N/A
Survey Unit Description. . INTERIOR OF BUILDING 778 (EAST NON-RAD) AREA EXTENDS FROM EAST END OF BUILDING TO COLUMN 8 (COLUMN 8 IS LOCATED JUST WEST OF 707 MAA GUARD VESTIBULE THIS AREA IS NOT RADIOLOGICALLY POSTED)	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<p>1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering</p> <p>2 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos</p> <p>3 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The highest "elevated reading" PAT measurement found in the 1m² scan area will be documented. Swipe measurements will be collected at the elevated reading location as well.</p> <p>4 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is not noted, fixed (PAT) measurements and swipes will be taken from the lower left hand corner of the 1m² scan area to maintain consistency in sample point locations.</p> <p>5 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02. Each recount shall be documented separately and the physical surface marked as specified in item 3 above.</p> <p>6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering. Survey forms shall be marked "N/A" where beta measurements are not collected.</p> <p>7 Where not already indicated assure that the following are written on the survey area diagram/photographic map/survey map</p> <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) <p>8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point</p> <p>(F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)</p>	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 2000-0002	Building (707) 778 INTERIOR EAST	
Survey Area: A	Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>		
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	1	db
Total Activity Surveys	1	db
Exposure Rate Surveys	NA	NA
Removable Surveys	1	db
Media Samples	NA	NA
Volumetric Samples	NA	NA
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	1	db
Total Activity Surveys	1	db
Exposure Rate Surveys	NA	NA
Removable Surveys	1	db
Media Samples	NA	NA
Volumetric Samples	NA	NA
Comments		

Pages 10 of 33 to 33 of 33 superseded by 4/20/00 Chg #1

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg _____ Mfg _____ Mfg _____
 Model _____ Model _____ Model _____
 Serial# _____ Serial# _____ Serial# _____
 Cal Due _____ Cal Due _____ Cal Due _____
 Bkg _____ Bkg _____ Bkg _____
 Efficiency _____ Efficiency _____ Efficiency _____
 MDA _____ MDA _____ MDA _____

Mfg _____ Mfg _____ Mfg _____
 Model _____ Model _____ Model _____
 Serial# _____ Serial# _____ Serial# _____
 Cal Due _____ Cal Due _____ Cal Due _____
 Bkg _____ Bkg _____ Bkg _____
 Efficiency _____ Efficiency _____ Efficiency _____
 MDA _____ MDA _____ MDA _____

Survey Type CONTAMINATION

Building _____
 Location _____
 Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____ Time _____

RCT _____ / _____ / _____
 Print name Signature Emp #

RCT _____ / _____ / _____
 Print name Signature Emp #

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____

RS Supervision _____

Print Name _____

Signature _____

Emp # _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

778 EAST END - NON RAD
(COLUMNS 8 THROUGH 11)

→ Z

118

117

8

to 707
MAA

GUARD
VEST

to 777
MAA

125C

9

124A

10

125
SHIFT
MGR
OFFICE

124

126

11

12

851

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type CONTAMINATION

Building _____

Location _____

Purpose Reconnaissance Level Characterization

RWP # _____

Date _____ Time _____

RCT _____ / _____ / _____

Print name _____ Signature _____ Emp # _____

RCT _____ / _____ / _____

Print name _____ Signature _____ Emp # _____

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____ RS Supervision _____ / _____
 Print Name _____ Signature _____ Emp # _____

852

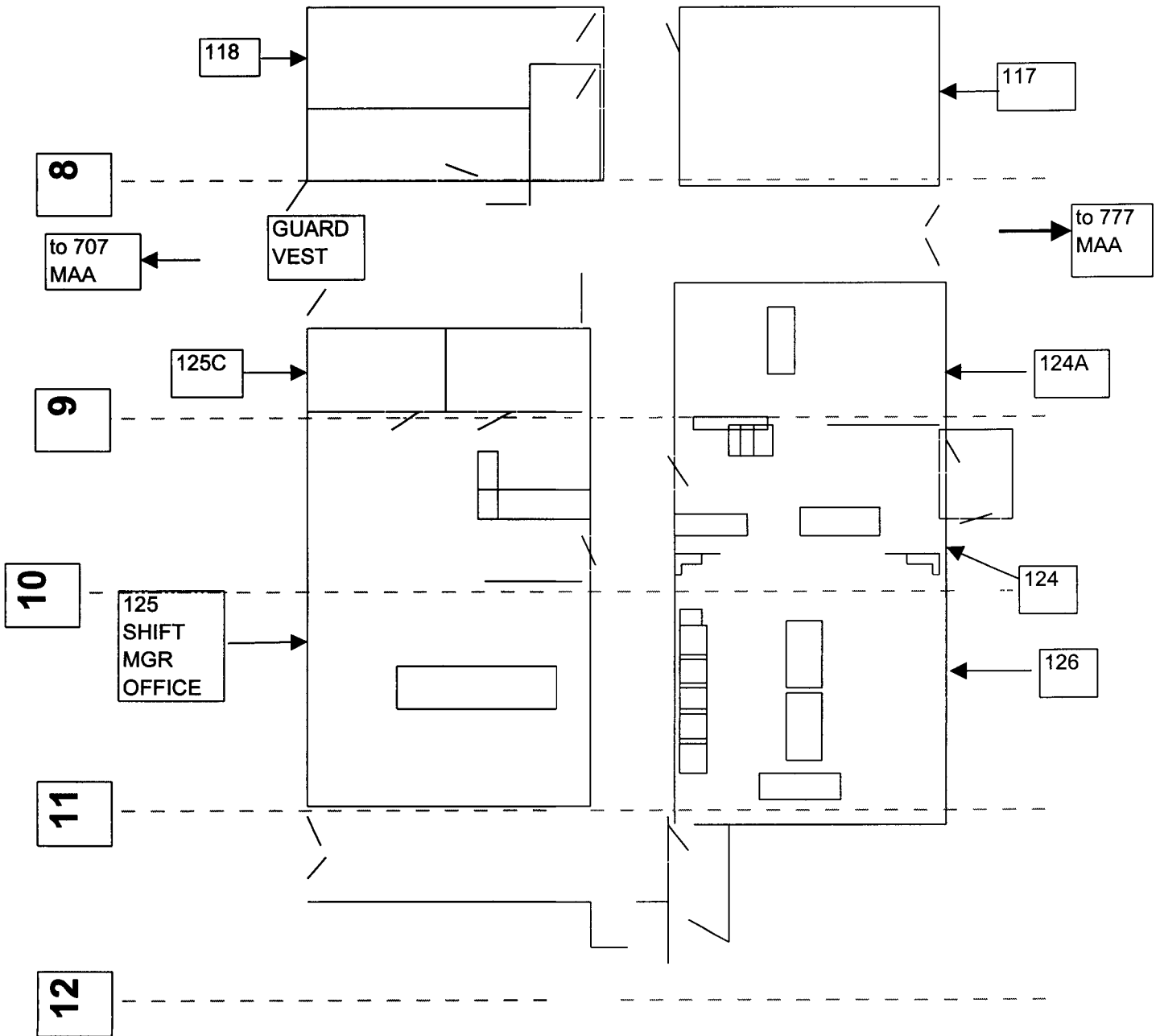
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

778 EAST END - NON RAD
(COLUMNS 8 THROUGH 11)

→ Z



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____

Time _____

RCT _____

Print name

Signature

Emp #

RCT _____

Print name

Signature

Emp #

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____

RS Supervision _____

Print Name

Signature

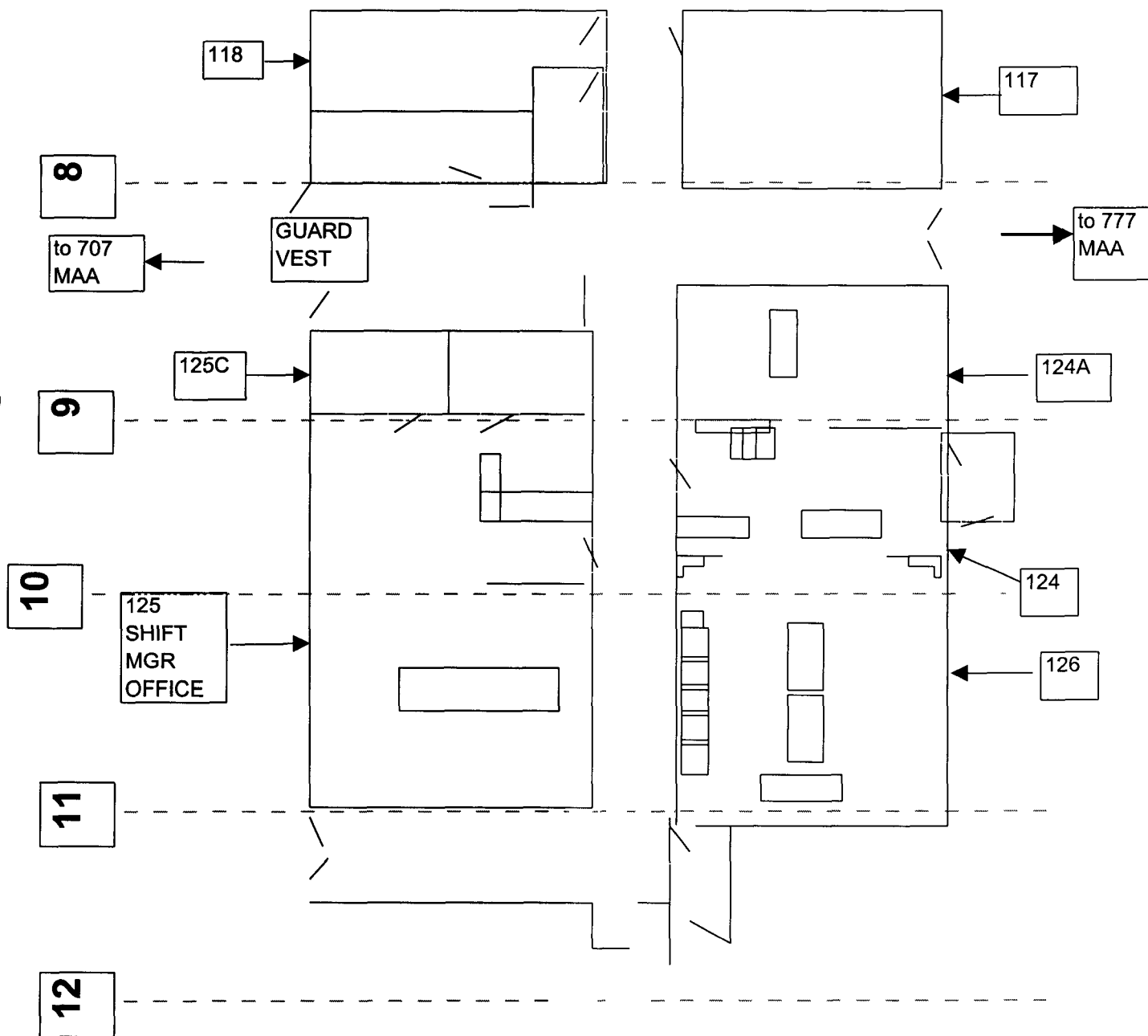
Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

778 EAST END - NON RAD.
(COLUMNS 8 THROUGH 11)



855

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____

Time _____

RCT _____

Print name _____

Signature _____

Emp # _____

RCT _____

Print name _____

Signature _____

Emp # _____

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____

RS Supervision _____

Print Name _____

Signature _____

Emp # _____

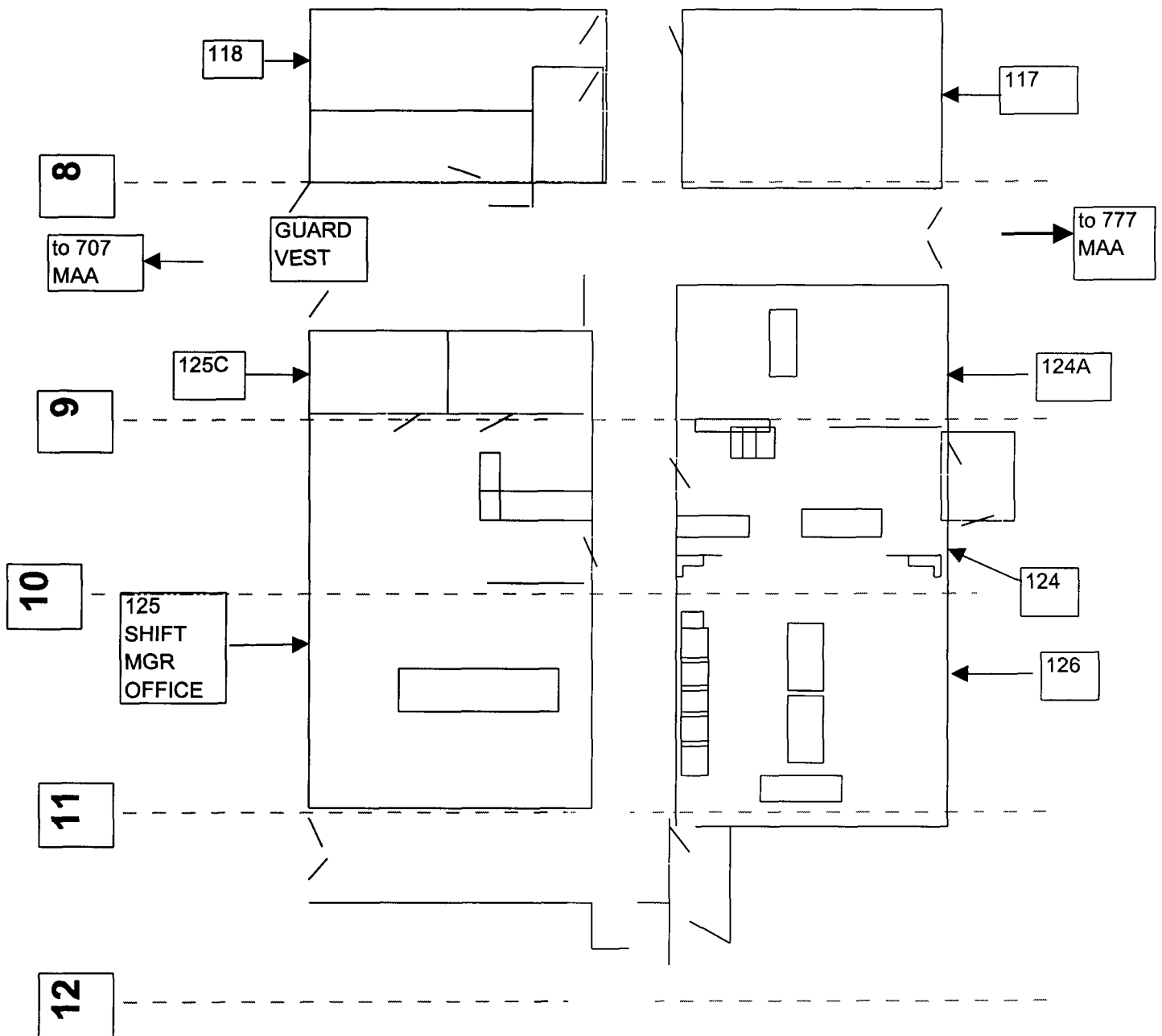
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

778 EAST END - NON RAD.
(COLUMNS 8 THROUGH 11)

→ Z



857

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____

Time _____

RCT _____

Print name _____

Signature _____

Emp # _____

RCT _____

Print name _____

Signature _____

Emp # _____

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____

RS Supervision: _____

Print Name _____

Signature _____

Emp # _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

778 BUILDING
WOMEN'S LOCKER
ROOM



11

12

13

14

15

16

TOWEL
RACK

SHOWER
ROOM

COLUMN LOCATIONS
APPROXIMATE

859

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____

Time _____

RCT _____

Print name _____

Signature _____

Emp # _____

RCT _____

Print name _____

Signature _____

Emp # _____

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____

RS Supervision _____

Print Name _____

Signature _____

Emp # _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

778 BUILDING
WOMEN'S LOCKER
ROOM



11

12

13

14

15

16

TOWEL
RACK

SHOWER
ROOM

COLUMN LOCATIONS
APPROXIMATE

861

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____

Time _____

RCT _____

Print name _____

Signature _____

Emp # _____

RCT _____

Print name _____

Signature _____

Emp # _____

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____

RS Supervision. _____

Print Name _____

Signature _____

Emp # _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

778 BUILDING
WOMEN'S LOCKER
ROOM



11

12

13

14

15

16

TOWEL
RACK

SHOWER
ROOM

COLUMN LOCATIONS
APPROXIMATE

863

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____

Time _____

RCT _____

Print name _____

Signature _____

Emp # _____

RCT _____

Print name _____

Signature _____

Emp # _____

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____

RS Supervision _____

Print Name _____

Signature _____

Emp # _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

**RADIOLOGICAL SAFETY
DRAWING SHOWING SURVEY POINTS**

778 BUILDING
WOMEN'S LOCKER
ROOM



11

12

13

14

15

16

TOWEL
RACK

SHOWER
ROOM

COLUMN LOCATIONS
APPROXIMATE

865

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____ Time _____

 RCT _____ / _____
 Print name Signature Emp #

 RCT _____ / _____
 Print name Signature Emp #

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

 Date Reviewed. _____ RS Supervision _____
 Print Name Signature Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

**778 BUILDING
MEN'S LOCKER ROOM**



ROOM 127 AREA

WEST SECTION

ROOM 137 AREA

MIDDLE SECTION

ROOM 140 AREA

EAST SECTION

11

16

20

12

17

21

13

18

22

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23

15

COLUMN LOCATIONS APPROXIMATE

867

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
 Mfg _____	 Mfg _____	 Mfg _____
 Model _____	 Model _____	 Model _____
 Serial# _____	 Serial# _____	 Serial# _____
 Cal Due _____	 Cal Due _____	 Cal Due _____
 Bkg _____	 Bkg _____	 Bkg _____
 Efficiency _____	 Efficiency _____	 Efficiency _____
 MDA _____	 MDA _____	 MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____

Time _____

RCT _____

Print name _____

Signature _____

Emp # _____

RCT _____

Print name _____

Signature _____

Emp # _____

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____

RS Supervision _____

Print Name _____

Signature _____

Emp # _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

**778 BUILDING
MEN'S LOCKER ROOM**



ROOM 127 AREA

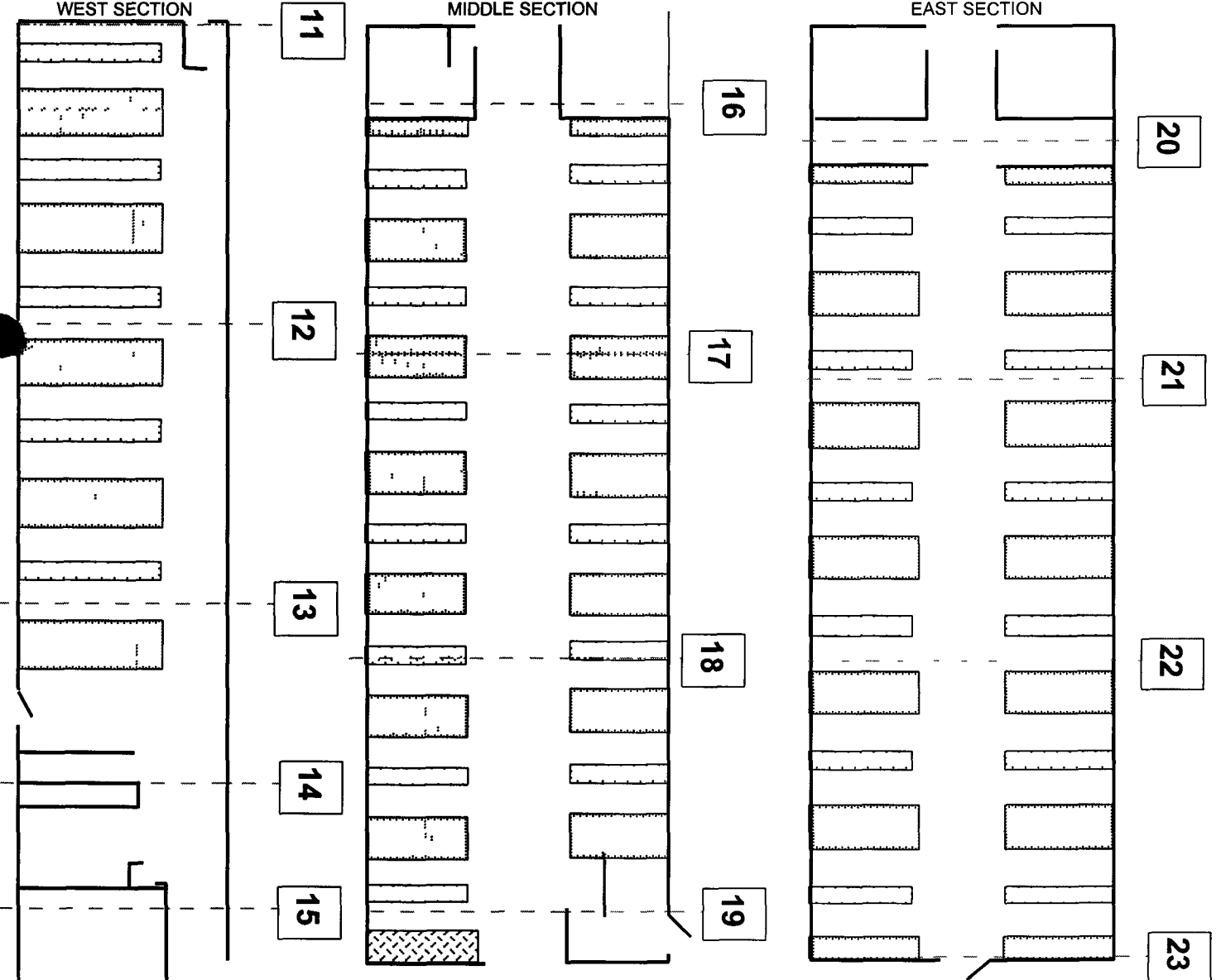
WEST SECTION

ROOM 137 AREA

MIDDLE SECTION

ROOM 140 AREA

EAST SECTION



869

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____ Time _____

 RCT _____ / _____
 Print name Signature Emp #

 RCT _____ / _____
 Print name Signature Emp #

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

 Date Reviewed _____ RS Supervision _____
 Print Name Signature Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

**778 BUILDING
MEN'S LOCKER ROOM**



ROOM 127 AREA

WEST SECTION

ROOM 137 AREA

MIDDLE SECTION

ROOM 140 AREA

EAST SECTION

11

12

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23

COLUMN LOCATIONS APPROXIMATE

871

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____ Time _____

 RCT _____ / _____ / _____
 Print name Signature Emp #

 RCT _____ / _____ / _____
 Print name Signature Emp #

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

 Date Reviewed _____ RS Supervision _____ / _____
 Print Name Signature Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

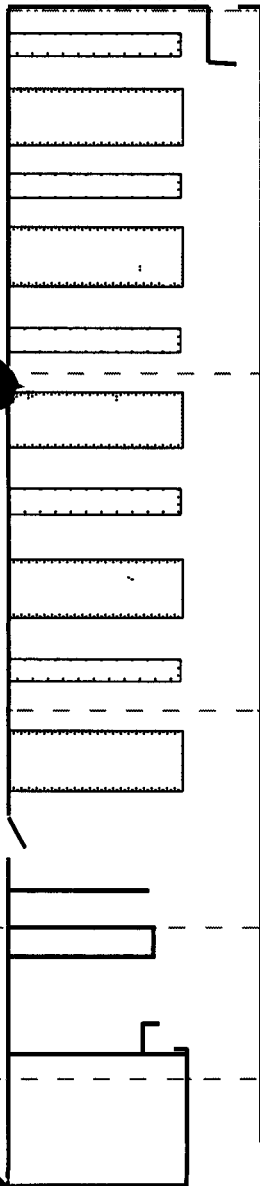
DRAWING SHOWING SURVEY POINTS

**778 BUILDING
MEN'S LOCKER ROOM**



ROOM 127 AREA

WEST SECTION



11

12

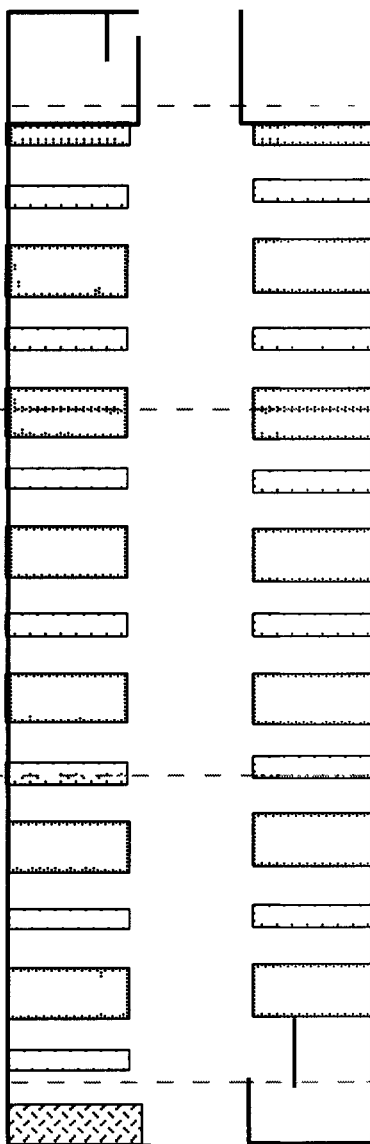
13

14

15

ROOM 137 AREA

MIDDLE SECTION



16

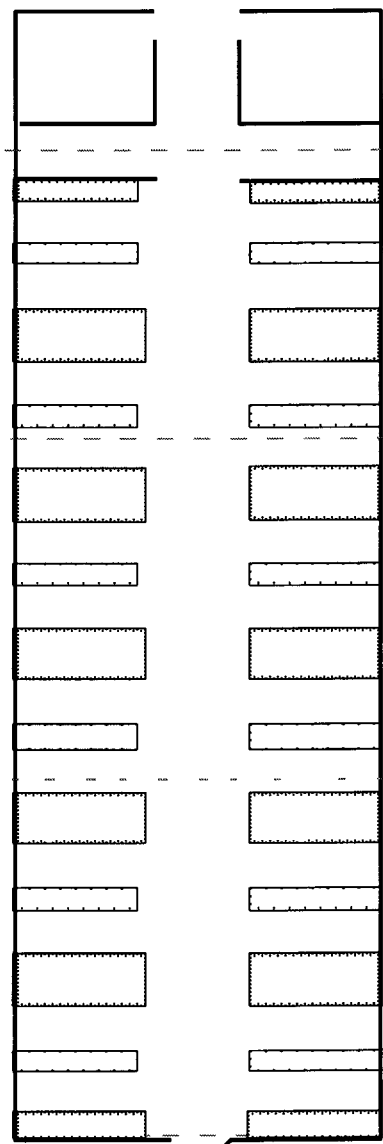
17

18

19

ROOM 140 AREA

EAST SECTION



20

21

22

23

COLUMN LOCATIONS APPROXIMATE

873

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. Eberline	Mfg. Eberline	Mfg. NeTech.
Model Sac-4	Model Sac-4	Model Electra
Serial # 846	Serial # 1270	Serial # 1518
Cal Due 8-15-00	Cal Due 4-12-00	Cal Due 6-29-00
Bkg 0.2 cpm	Bkg 0.0 cpm	Bkg 0.0 cpm
Efficiency 33%	Efficiency 33%	Efficiency 2186
MDA 12.9 dpm	MDA 8.2 dpm	MDA 94 dpm
Mfg. Eberline	Mfg. Eberline	Mfg. NE Tech
Model BC-4	Model BC-4	Model Electra
Serial # 872	Serial # 833	Serial # 3120
Cal Due 4-12-00	Cal Due 7-14-00	Cal Due 4-26-00
Bkg 41 cpm	Bkg 15 cpm	Bkg 3.0 cpm
Efficiency 25%	Efficiency 25%	Efficiency 2109
MDA 99.2 dpm	MDA 103.4 dpm	MDA 94 dpm

Survey Type Contamination

Building ~~707~~ 778
 Location 778 Interior East Survey Area A
 Purpose Reconnaissance Level Characterization

RWP # 007071204

Date 4-5-00 Time Days

Comments Floor / Walls < 2 meters Biased survey point

1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	F	0	-12	24	16	Wall < 2m	3	-20	90
2	F	0	-20	18	17	F	0	-8	48
3	F	0	-4	12	18	F	0	-40	12
4	F	0	-40	18	19	F	0	16	0
5	F	0	36	12	20	F	0	4	12
6	F	3	-48	48	21	F	0	8	18
7	^{RL} Wall < 2m	0	0	60	22	F	0	-8	36
8	^{RL} Wall < 2m	0	-4	18	23	F	0	4	12
9	Wall < 2m	0	36	18	24	F	0	4	36
10	F	3	0	24	25	F	3	-20	18
11	F	0	12	16	26	F	0	0	12
12	F	0	51	24	27	F	0	28	54
13	F	3	-20	66	28	F	0	-4	42
14	F	0	32	18	29	F	0	-44	18
15	Wall < 2m	0	32	24	30	F	0	36	64

Date Reviewed: 4-17 00 RS Supervision.

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**RADIOLOGICAL SAFETY**

2 of 6

Drawing Showing Survey Points

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	F	0	8	18	61				
32	F	0	-28	30	62				
33	F	0	32	42	63				
34	F	0	-48	18	64				
35	F	0	-48	30	65				
36	Wall < 2m	0	56	46	66				
37	Wall < 2m	0	4	30	67				
38	Wall < 2m	0	8	18	68				
39	Wall < 2m	3	-4	48	69				
40	Wall < 2m	0	-44	24	70				
41	Wall < 2m	0	-48	18	71				
42	Wall < 2m	3	-4	42	72				
43	Wall < 2m	0	-40	108	73				
44	Wall < 2m	0	4	30	74				
45	Wall < 2m	0	-20	24	75				
46	END OF SURVEY				76				
47					77				
48					78				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				
57					87				
58					88				
59					89				
60					90				

ROCKY PLAINS ENVIRONMENTAL TECHNOLOGY SITE

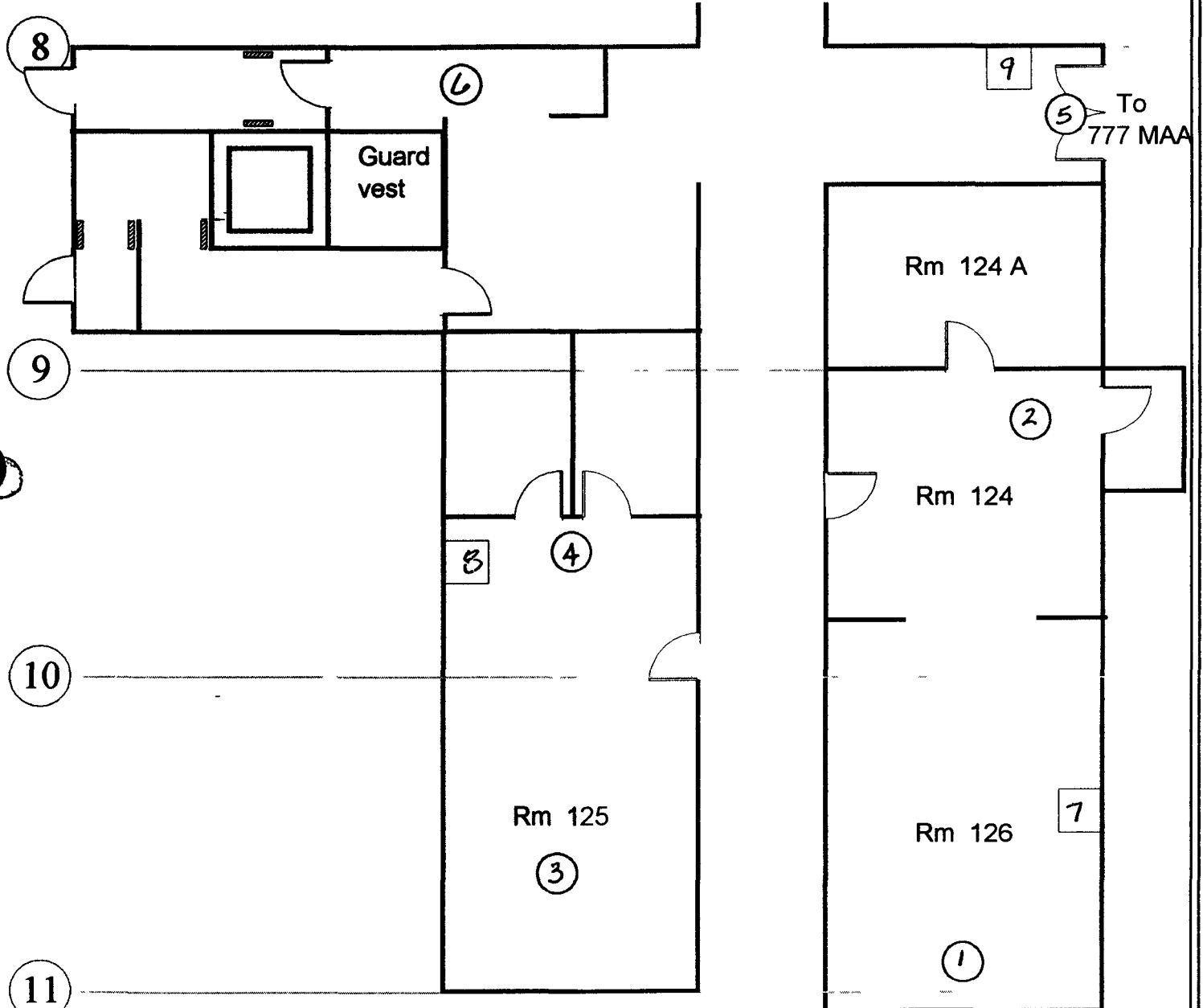
RADIOLOGICAL SAFETY

3096

Drawing Showing Survey Points



Building 778



876

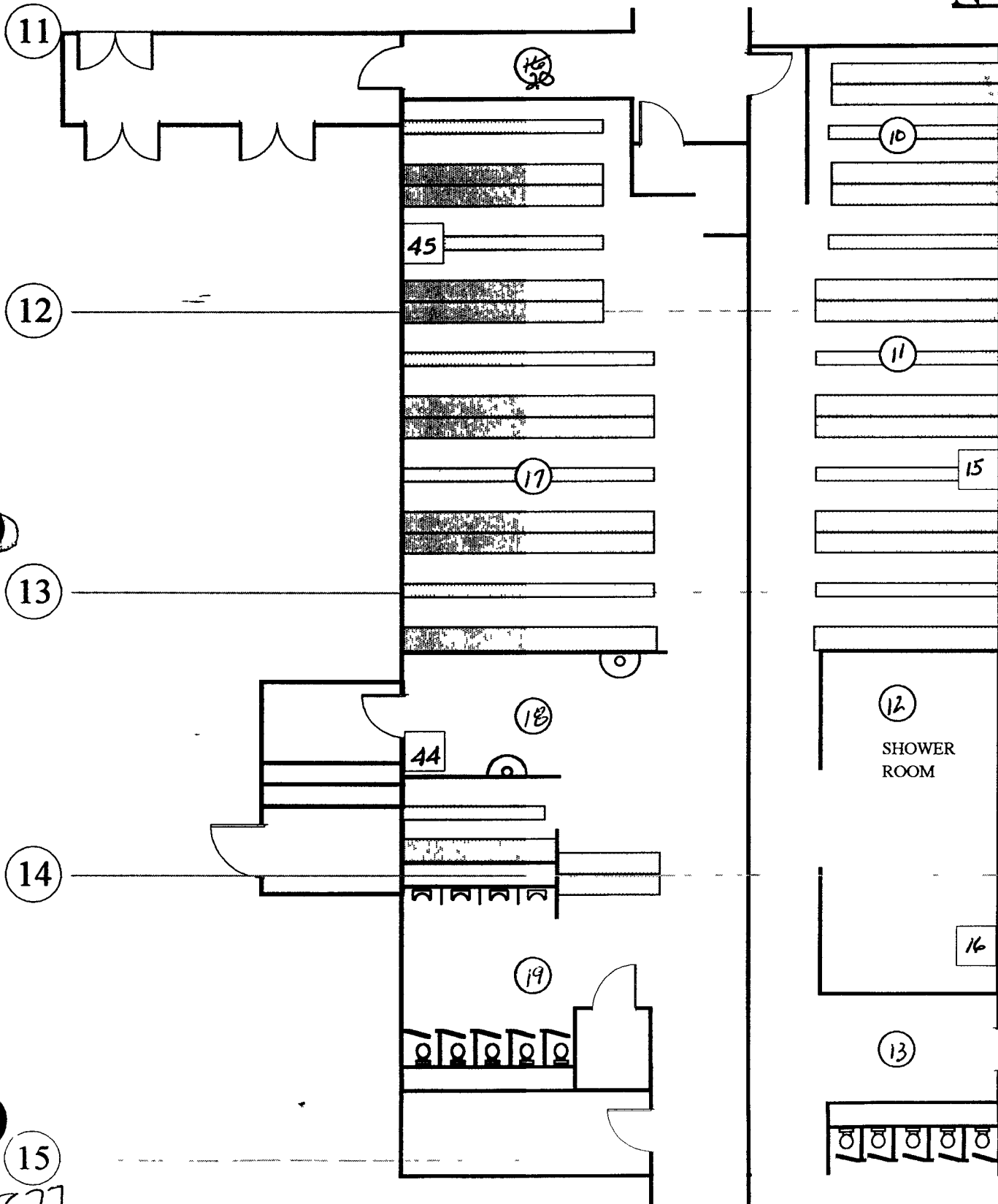
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

4 6 5 6

Drawing Showing Survey Points

778 Locker Room



ROCKWELL ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

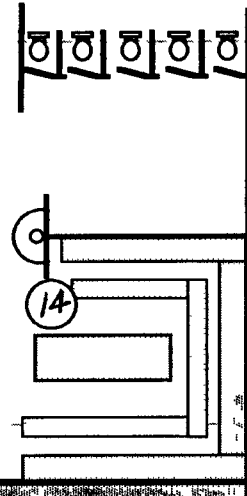
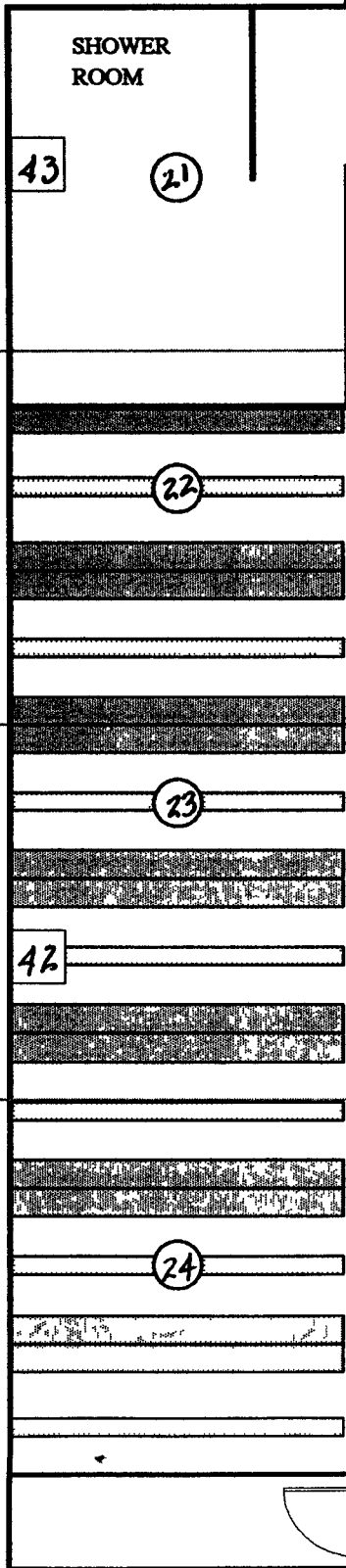
5.096

Drawing Showing Survey Points

778 Locker Room



15



16

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878

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

6 0 9 6

Drawing Showing Survey Points

778 Locker Room



19 1

SHOWER
ROOM

SHOWER
ROOM

39

28

35

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36

21

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33

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32

879

ADRIAN'S ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1270</u>	Serial # <u>1233</u>
Cal Due <u>8-15-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.0 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>2.6 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>2063</u>
MDA <u>8.2 dpm</u>	MDA <u>12.9 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>N/A</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u></u>
Bkg <u>38 cpm</u>	Bkg <u>43 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>95.9 dpm</u>	MDA <u>101.3 dpm</u>	MDA <u></u>

Survey Type: ContaminationBuilding 708 778Location Interior East Survey Area APurpose Reconnaissance Level CharacterizationRWP # 007071204Date 4-7-00 Time DaysPrint name / Signature / Emp # /Comments Floor / Walls < 2 meters Biased survey points 1/51 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Total Beta	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Total Beta
		Alpha	Beta					Alpha	Beta		
1	<u>F Drain</u>	0	36	18	NA	16					
2	" "	6	-24	18	NA	17					
3	" "	0	40	12	NA	18					
4	" "	0	-44	0	NA	19					
5	" "	0	32	0	NA	20					
6	" "	0	-24	0	NA	21					
7	" "	0	44	6	NA	22					
8	" "	0	-28	18	NA	23					
9	" "	0	4	18	NA	24					
10	" "	0	-28	18	NA	25					
11	<u>End of Survey</u>					26					
12						27					
13						28					
14						29					
15						30					

Date Reviewed: 4-17-00 RS Supervision:

RADIOLOGICAL SAFETY

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

245



Building 778

To
777 MAA

8

Guard
vest

9

Rm 124 A

Rm 124

10

Rm 125

Rm 126

11

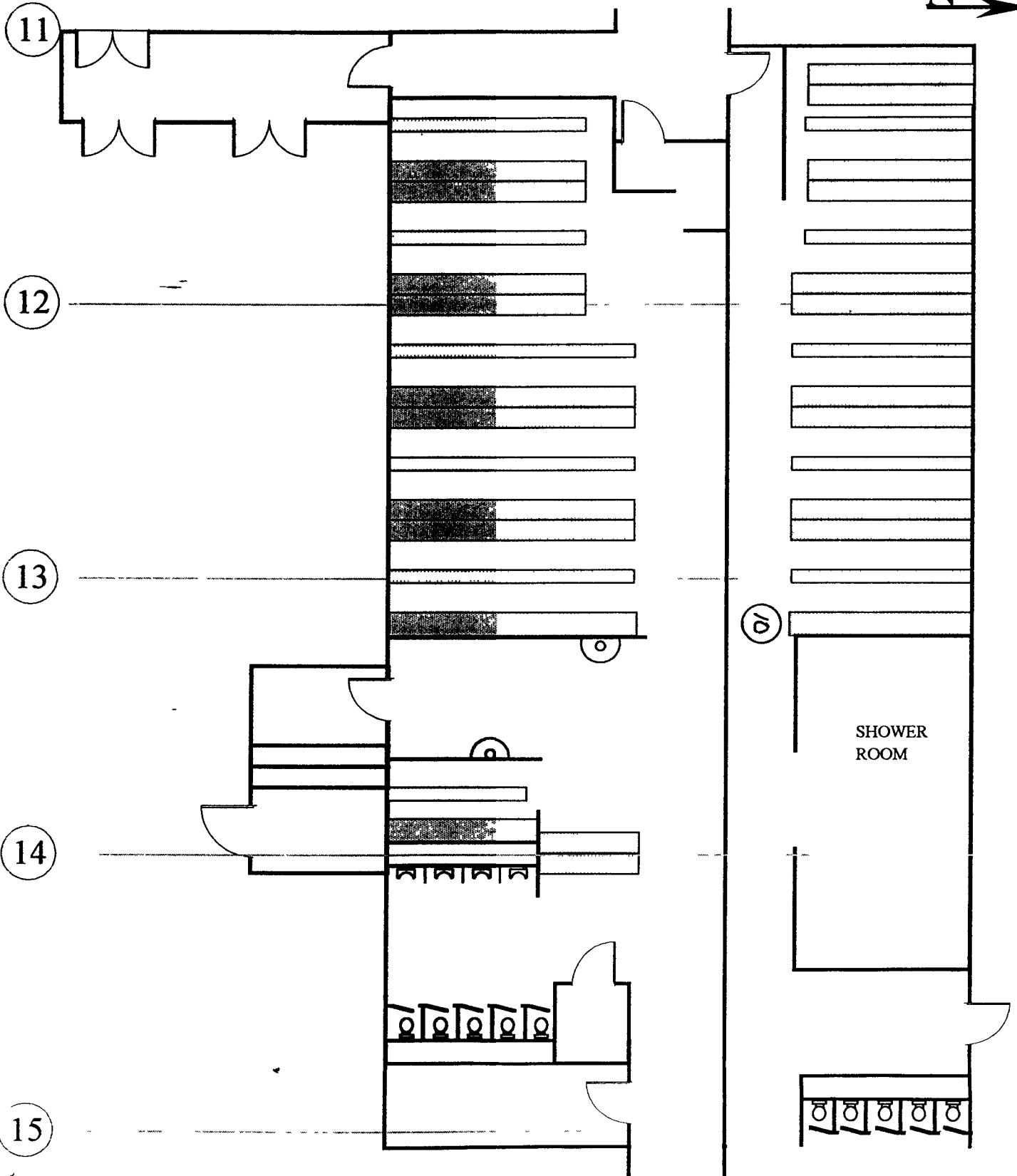
POINT PLANT ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

345

Drawing Showing Survey Points

778 Locker Room



ROCKY FLAIS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

4 of 5

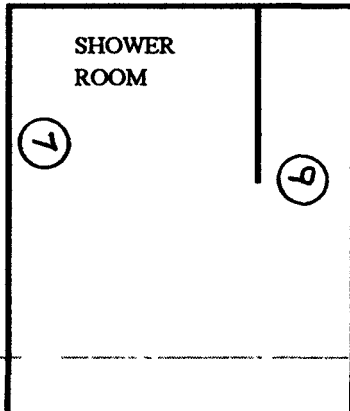
Drawing Showing Survey Points

778 Locker Room



15

39



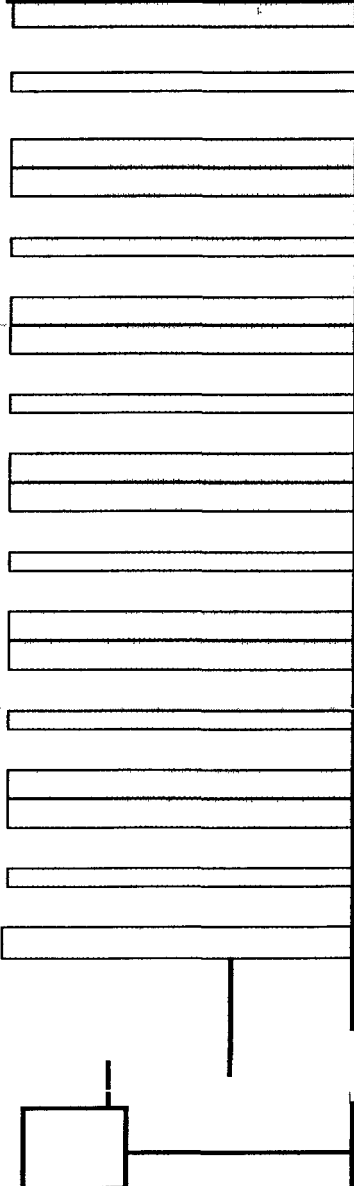
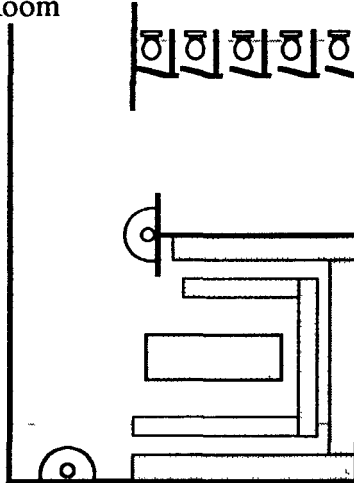
6

16

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883

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

585

Drawing Showing Survey Points

778 Locker Room



19 1

SHOWER
ROOM

SHOWER
ROOM

20

4

21

3

22

2

23

1

884

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1270</u>	Serial # <u>1233</u>
Cal Due <u>8-15-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.0 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>2063</u>
MDA <u>8.2 dpm</u>	MDA <u>12.9 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u>N/A</u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u></u>
Bkg <u>38 cpm</u>	Bkg <u>43 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>95.9 dpm</u>	MDA <u>101.3 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 707 778
 Location Interior East Survey Area A
 Purpose Reconnaissance Level Characterization

RWP # 00 707 1204Date 4-7-00 Time DaysRC RC

Comments Ceiling / Walls > 2 meters Biased survey points
1 minute pats and swipes See map for locations

185

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	<u>Wall > 2m</u>	0	-8	18	16				
2	" "	0	4	12	17				
3	" "	0	36	12	18				
4	" "	0	-44	30	19				
5	" "	0	-24	24	20				
6	" "	0	20	12	21				
7	" "	0	-8	18	22				
8	" "	0	-12	0	23				
9	<u>Ceiling</u>	0	-28	24	24				
10	<u>Ceiling</u>	0	8	0	25				
11	<u>Ceiling</u>	0	20	24	26				
12	<u>N/A</u>				27				
13					28				
14					29				
15					30				

End of SurveyDate Reviewed 4-17-00 RS Supervision

Print Name

Signature

Emp #

ENVIRONMENTAL TECHNOLOGY SITE

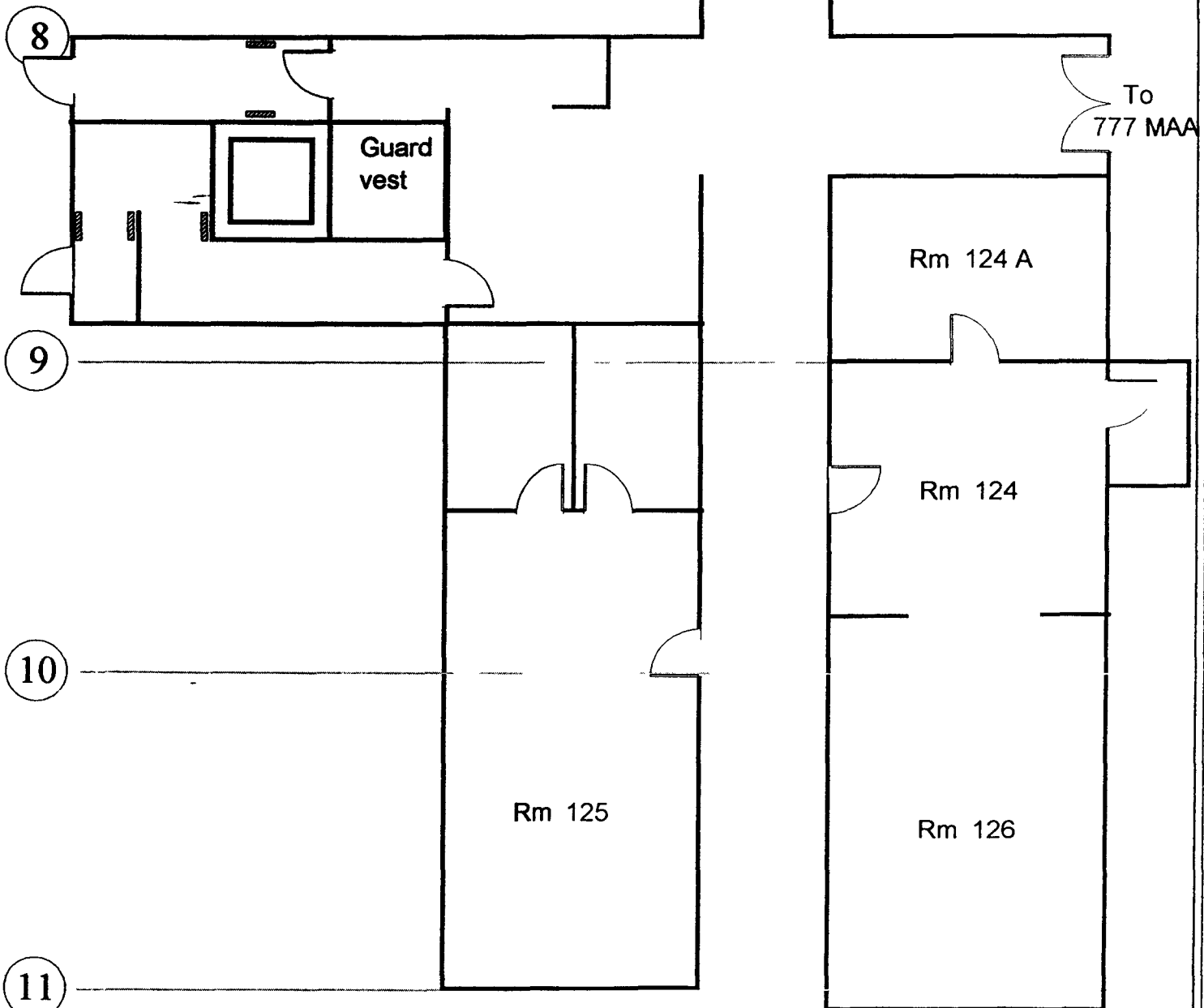
RADIOLOGICAL SAFETY

245

Drawing Showing Survey Points



Building 778



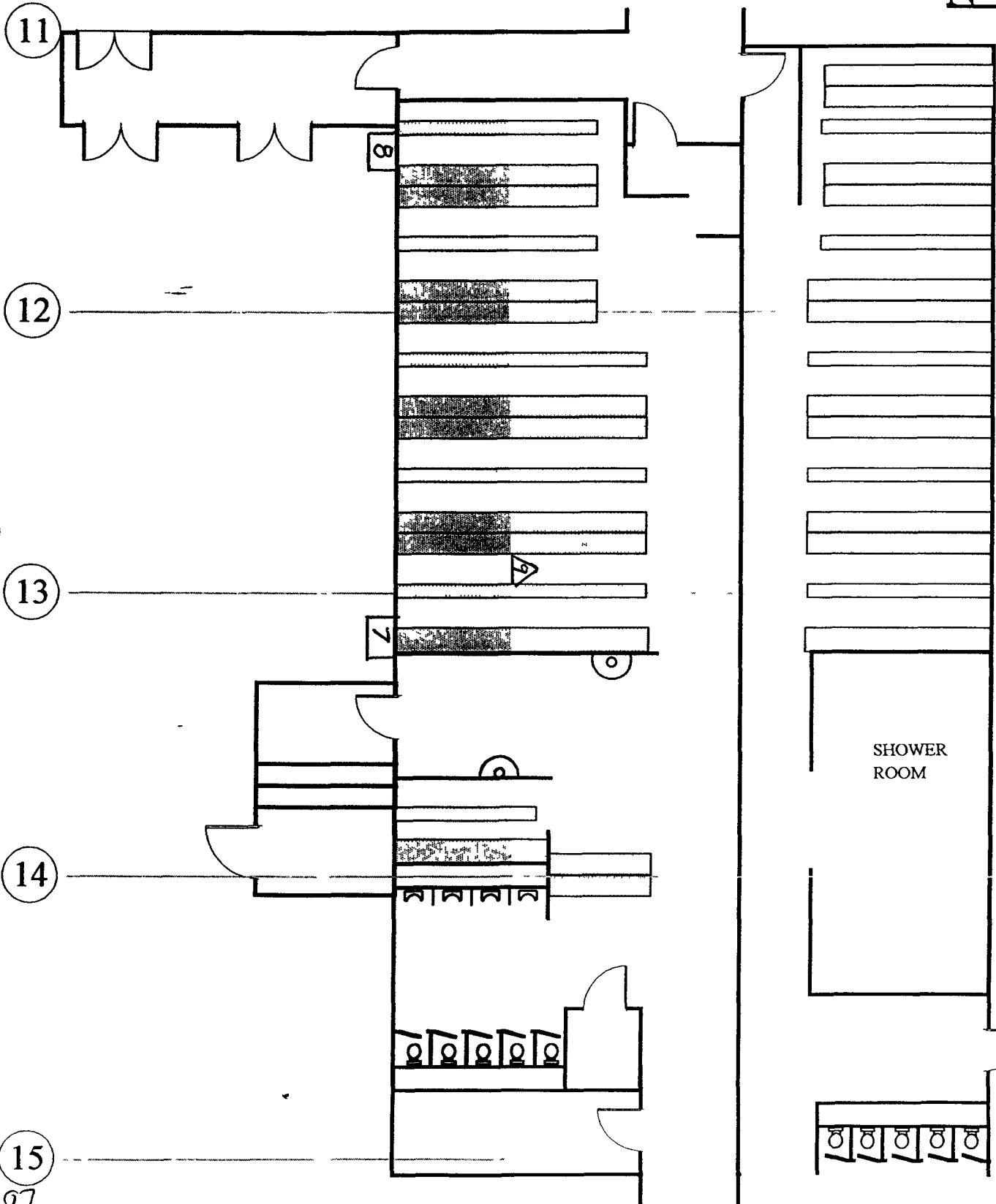
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

345

Drawing Showing Survey Points

778 Locker Room



887

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

4 of 5

Drawing Showing Survey Points



778 Locker Room

SHOWER
ROOM

15

16

17

18

19

9

5

888

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

AL
6/8 5.85

Drawing Showing Survey Points

778 Locker Room



19 1

SHOWER
ROOM

SHOWER
ROOM

20

4

21

2

22



23

3

1

889

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 846	Serial # 1270	Serial # 1233
Cal Due 8-15-00	Cal Due 4-12-00	Cal Due 5-11-00
Bkg 0.2 cpm	Bkg 0.0 cpm	Bkg 0.0 cpm
Efficiency 33%	Efficiency 33%	Efficiency 2063
MDA 12.9 dpm	MDA 8.2 dpm	MDA 94 dpm
Mfg Eberline	Mfg Eberline	Mfg NE
Model BC-4	Model BC-4	Model Electra
Serial # 872	Serial # 833	Serial # 3265
Cal Due 4-12-00	Cal Due 7-14-00	Cal Due 7-3-00
Bkg 44 cpm	Bkg 36 cpm	Bkg 1.0 cpm
Efficiency 25%	Efficiency 25%	Efficiency 2101
MDA 102.4 dpm	MDA 93.65 dpm	MDA 94 dpm

Survey Type Contamination

Building 778
 Location East Interior Survey Area A
 Purpose Reconnaissance Level Characterization

RWP # 00 707 1204

Date 4-11-00 Time Days

Print name / Signature / Emp #

Comments Equipment Biased survey points

1 minute pats and swipes See map for locations

185

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Ceiling Vent	0	-4	12	16	HEATER WALL MOUNT	0	0	18
2	Ceiling Vent	0	4	84	17	Vent Ceiling	3	-28	60
3	WALL Vent	0	-40	30	18	Sink	0	12	30
4	ELECTRICAL Box	0	32	12	19	HEATER	0	28	48
5	Steel Beam	0	-8	18	20	Pump	0	-4	30
6	Steel Beam	0	12	24	21	Flange on Steam TANK	0	-20	12
7	Ceiling Vent	3	-8	114	22	COLD WATER PIPING	0	-16	18
8	Ceiling Vent	0	0	18	23	HEATER WALL MOUNT	3	4	36
9	Ceiling Vent	0	-48	18	24	JTB-19 Electrical Box	0	-4	18
10	Ceiling Vent	0	64	174	25	Vent Ceiling Shower	0	28	42
11	Vent Wall by locker #353	0	28	12	26	Vent Ceiling	0	-8	48
12	Bottom of locker #313	0	24	24	27	WALL ELECTRICAL Panel	0	0	42
13	Vent by Side door	0	-12	90	28	Pull down Stair Steps	0	12	36
14	Sink	0	8	36	29	Ceiling Vent	0	24	30
15	LOCKER # 941	0	-24	12	30	Ceiling Vent	0	8	60

Date Reviewed. 4 17 00 RS Supervision.

Print Name

Signature

Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

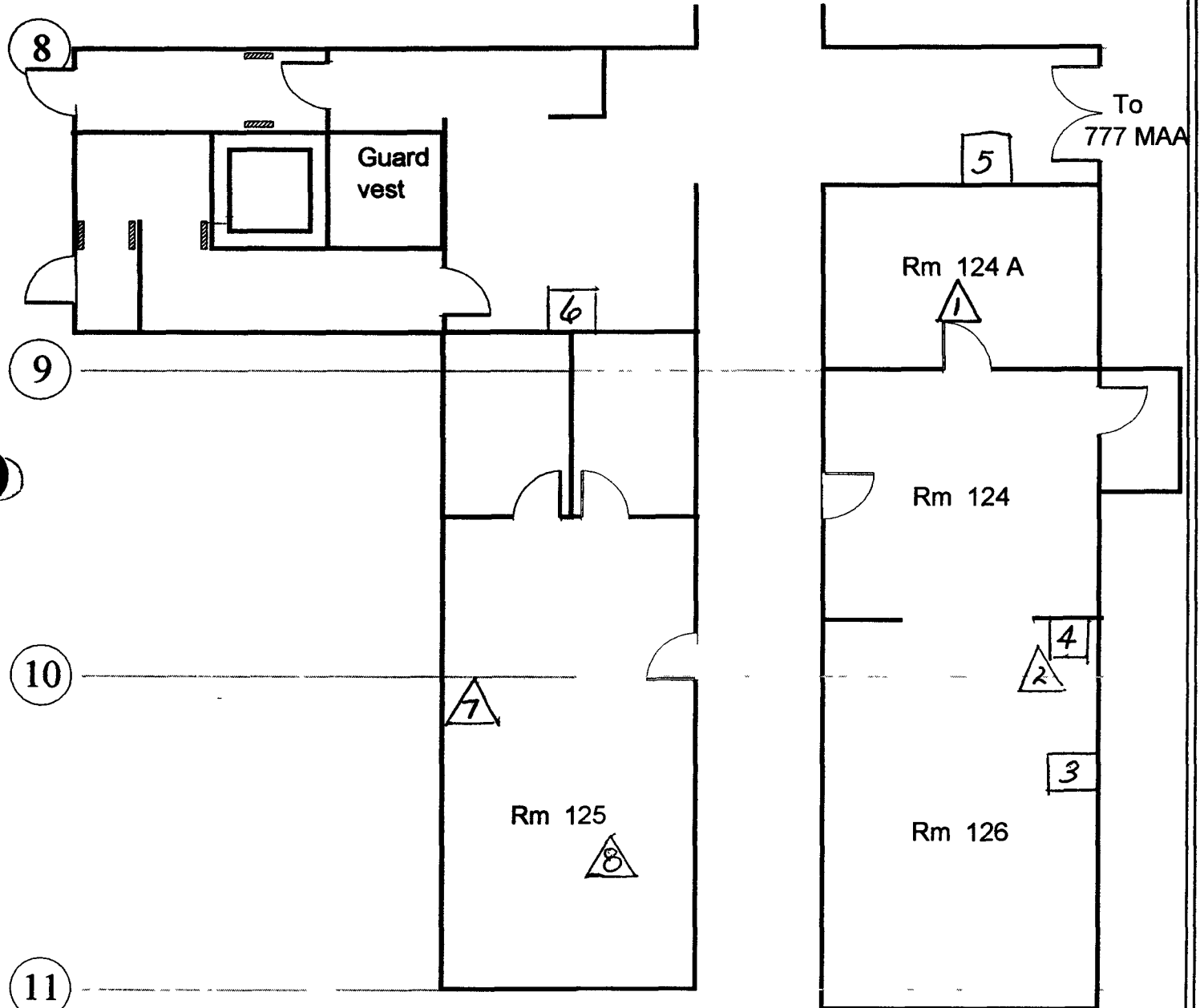
RADIOLOGICAL SAFETY

Drawing Showing Survey Points

2 of 5



Building 778



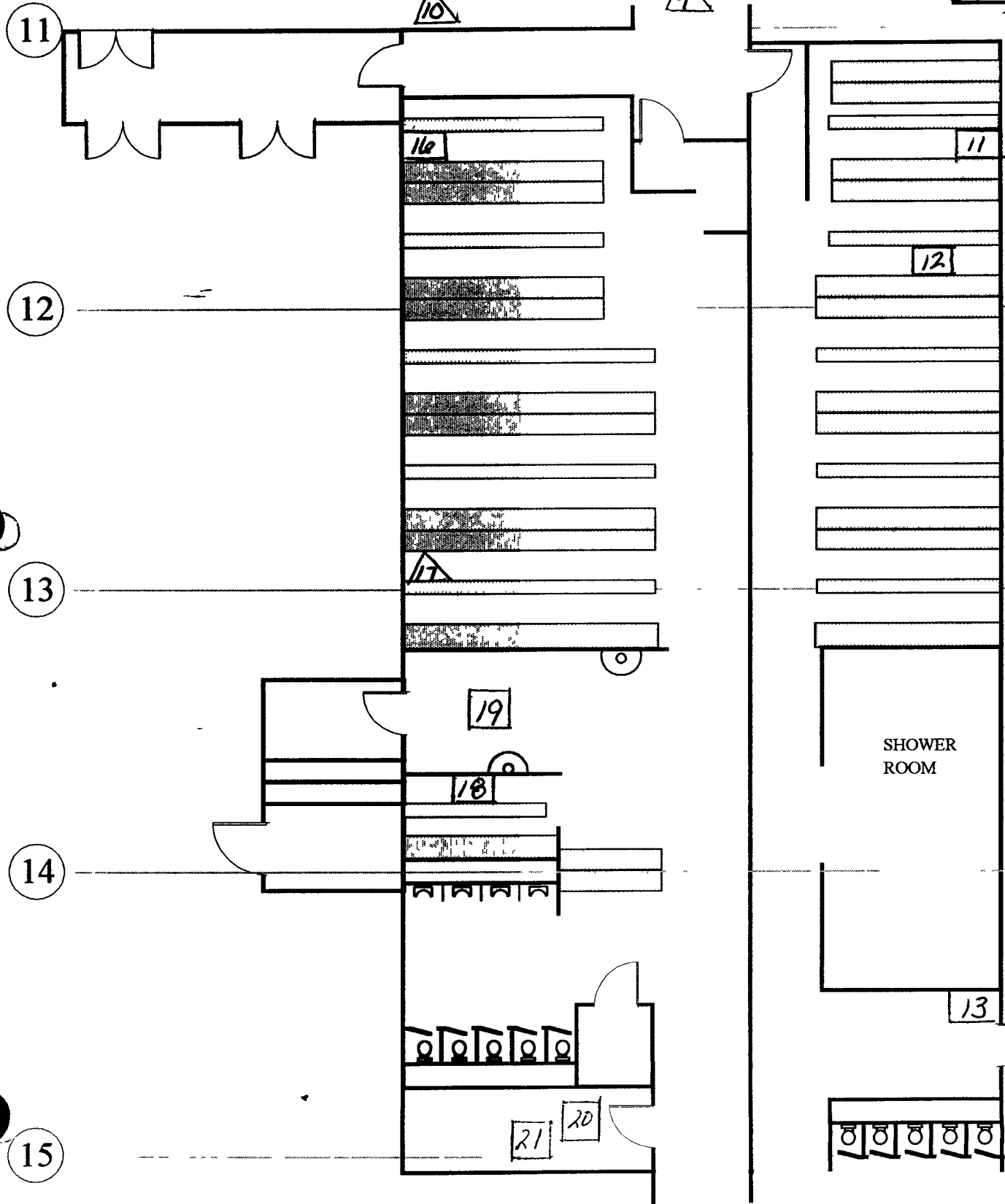
ROCKY FLAT ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

325

Drawing Showing Survey Points

778 Locker Room



892

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

4 of 5

778 Locker Room



15

SHOWER
ROOM

16

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22

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24

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

585

778 Locker Room



19 1

20

21

22

23



SHOWER
ROOM

SHOWER
ROOM



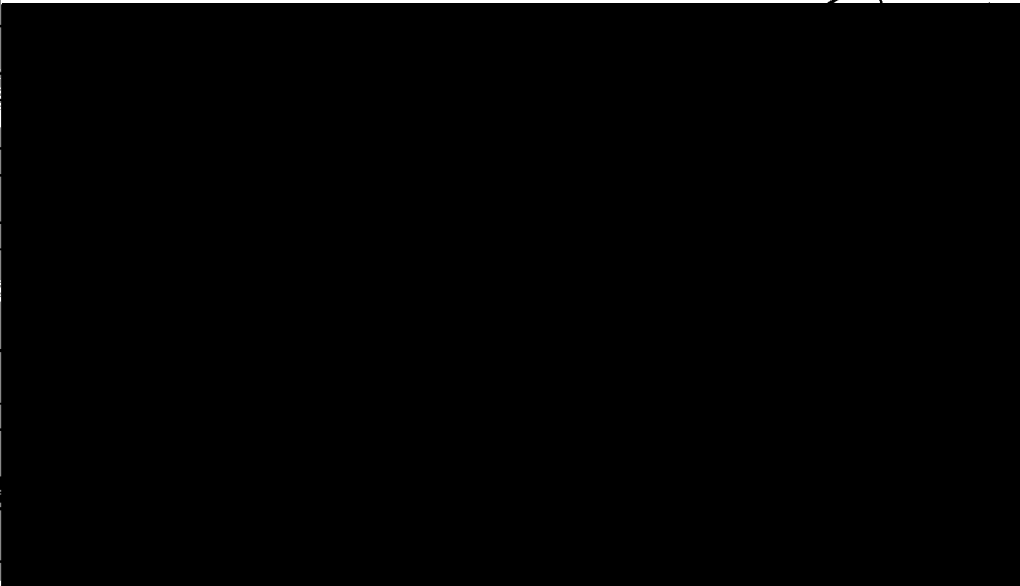
27

[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 2000-0002			Building (707) 778 INTERIOR WEST		Type 2	
Survey Area B			Survey Unit N/A		Area (m²) 1233	
Survey Unit Description INTERIOR OF BUILDING 778 (WEST) AREA EXTENDS WEST FROM COLUMN 8 TO APPROXIMATELY COLUMN 7W IN ROOM 100 (COLUMN 8 IS LOCATED JUST WEST OF 707 MAA GUARD VESTIBULE THE MAJORITY OF THIS AREA IS NOT-RADIOLOGICALLY POSTED BUT INCLUDES A RADIOACTIVE MATERIAL AREA IN OLD LAUNDRY AREA						
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>				Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
56	31	30	0	0	66	
Building			Type		Survey Area	
Survey Unit			Area (m²)			
Survey Unit Description						
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>				Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building			Type		Survey Area	
Survey Unit			Area (m²)			
Survey Unit Description						
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>				Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building			Type		Survey Area	
Survey Unit			Area (m²)			
Survey Unit Description						
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>				Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	

SURVEY PACKAGE COVER SHEET

Package ID: 2000-0002	Building (707) 778 INTERIOR WEST	
Survey Area: B	Survey Unit N/A	
Survey Unit Description: INTERIOR OF BUILDING 778 (WEST) AREA EXTENDS WEST FROM COLUMN 8 TO APPROXIMATELY COLUMN 7W IN ROOM 100 (COLUMN 8 IS LOCATED JUST WEST OF 707 MAA GUARD VESTIBULE THE MAJORITY OF THIS AREA IS NOT-RADIOLOGICALLY POSTED BUT DOES INCLUDE A RADIOACTIVE MATERIAL AREA IN OLD LAUNDRY AREA		
Building Information:		
Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/>		
Building Type Type 1 <input type="checkbox"/> Type 2 <input checked="" type="checkbox"/> Type 3 <input type="checkbox"/>		
Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____		
Justification for Classification: N/A		
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads		
Special Safety Precautions: Access to overhead, outdoor, or elevated areas may require additional controls or approvals from security Assure that appropriate notifications have been made		
Isolation Controls:		
Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>		
Labeling Requirements: NONE		
Survey Package Implementation:		
		Date 8/2/00
		N/A
		Date 3/2/00
		Date
		Date 5/2/00
		N/A
		Date 5/2/00
		Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 2000-0002		Building (707) 778 INTERIOR WEST
Survey Area B		Survey Unit N/A
Survey Unit Description. INTERIOR OF BUILDING 778 (WEST) AREA EXTENDS WEST FROM COLUMN 8 TO APPROXIMATELY COLUMN 7W IN ROOM 100 (COLUMN 8 IS LOCATED JUST WEST OF 707 MAA GUARD VESTIBULE THE MAJORITY OF THIS AREA IS NOT-RADIOLOGICALLY POSTED BUT DOES INCLUDE A RADIOACTIVE MATERIAL AREA IN OLD LAUNDRY AREA		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	FLOORS/WALLS < 2 meters 56 <u>uniformly distributed</u> survey points as follows <ul style="list-style-type: none"> - 4 points total per each column section with 2 points on walls, 2 points on floors alternating wall points between North and South half/rooms in each column section (52 points total for ~13 column sections) - 2 points on floor of room 104A (plenum area) - 2 points on 2 different walls in room 104A (plenum area) 10 <u>biased</u> survey points at areas such as <ul style="list-style-type: none"> - floor drains - beneath equipment which has history of potential contamination - Areas that are potentially contaminated based on past history/use based upon RCT judgement CEILINGS/WALLS > 2 meters 21 <u>biased</u> surveys of ceilings and walls > 2 meters as follows <ul style="list-style-type: none"> - 1 point per wall > 2 meters for each column sections (~13 points total) alternating between North and South walls/rooms - 6 ceiling points (above and below dropped ceilings where present) - 1 point in room 104A (plenum) on ceiling, 1 point on wall > 2m in 104A EQUIPMENT 30 <u>biased</u> survey points on equipment based on RCT judgement	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4 (NOTE Column spacing is approximately every 20 feet Where carpeting is present on floors and cannot be lifted for surveys, take additional wall surveys in lieu of floor surveys)

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID 2000-0002		Building (707) 778 INTERIOR WEST
Survey Area B		Survey Unit N/A
Survey Unit Description INTERIOR OF BUILDING 778 (WEST) AREA EXTENDS WEST FROM COLUMN 8 TO APPROXIMATELY COLUMN 7W IN ROOM 100 (COLUMN 8 IS LOCATED JUST WEST OF 707 MAA GUARD VESTIBULE THE MAJORITY OF THIS AREA IS NOT-RADIOLOGICALLY POSTED BUT DOES INCLUDE A RADIOACTIVE MATERIAL AREA IN OLD LAUNDRY AREA		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 66 1 m ² surface scans shall be taken at each location identified for surface activity measurements Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NONE	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

d 5-2-00

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 2000-0002	Building (707) 778 INTERIOR WEST
Survey Area: B	Survey Unit N/A
Survey Unit Description: INTERIOR OF BUILDING 778 (WEST) AREA EXTENDS WEST FROM COLUMN 8 TO APPROXIMATELY COLUMN 7W IN ROOM 100 (COLUMN 8 IS LOCATED JUST WEST OF 707 MAA GUARD VESTIBULE THE MAJORITY OF THIS AREA IS NOT-RADIOLOGICALLY POSTED BUT DOES INCLUDE A RADIOACTIVE MATERIAL AREA IN OLD LAUNDRY AREA	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none">- Direct alpha contamination- Removable alpha contamination- Removable beta contamination- 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4. Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

5-2-00

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 2000-0002	Building (707) 778 INTERIOR WEST
Survey Area: B	Survey Unit N/A
Survey Unit Description: . INTERIOR OF BUILDING 778 (WEST) AREA EXTENDS WEST FROM COLUMN 8 TO APPROXIMATELY COLUMN 7W IN ROOM 100 (COLUMN 8 IS LOCATED JUST WEST OF 707 MAA GUARD VESTIBULE THE MAJORITY OF THIS AREA IS NOT-RADIOLOGICALLY POSTED BUT INCLUDES A RADIOACTIVE MATERIAL AREA IN OLD LAUNDRY AREA	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<p>1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering</p> <p>2 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos</p> <p>3 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The highest "elevated reading" PAT measurement found in the 1m² scan area will be documented. Swipe measurements will be collected at the elevated reading location as well.</p> <p>4 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is not noted, fixed (PAT) measurements and swipes will be taken from the lower left hand corner of the 1m² scan area to maintain consistency in sample point locations.</p> <p>5 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02. Each recount shall be documented separately and the physical surface marked as specified in item 3 above.</p> <p>6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering. Survey forms shall be marked "N/A" where beta measurements are not collected.</p> <p>7 Where not already indicated, assure that the following are written on the survey area diagram/photographic map/survey map:</p> <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) <p>8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point:</p> <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 2000-0002	Building (707) 778 INTERIOR WEST					
Survey Area: B	Survey Unit N/A					
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>						
All Documentation Reviewed for Completion			RCT Supervisor	PRE		
Scan Surveys			1	db		
Total Activity Surveys			1	db		
Exposure Rate Surveys			NA	NA		
Removable Surveys			1	db		
Media Samples			NA	NA		
Volumetric Samples			NA	NA		
All Surveys and Samples Accounted For			RCT Supervisor	PRE		
Scan Surveys			1	db		
Total Activity Surveys			1	db		
Exposure Rate Surveys			NA	NA		
Removable Surveys			1	db		
Media Samples			NA	NA		
Volumetric Samples			NA	NA		
Comments 						
5-2-00 Date						
5-2-00 Date						
5/2/00 Date						

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____

Time _____

RCT _____

Print name

Signature

Emp #

RCT _____

Print name

Signature

Emp #

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____

RS Supervision _____

Print Name

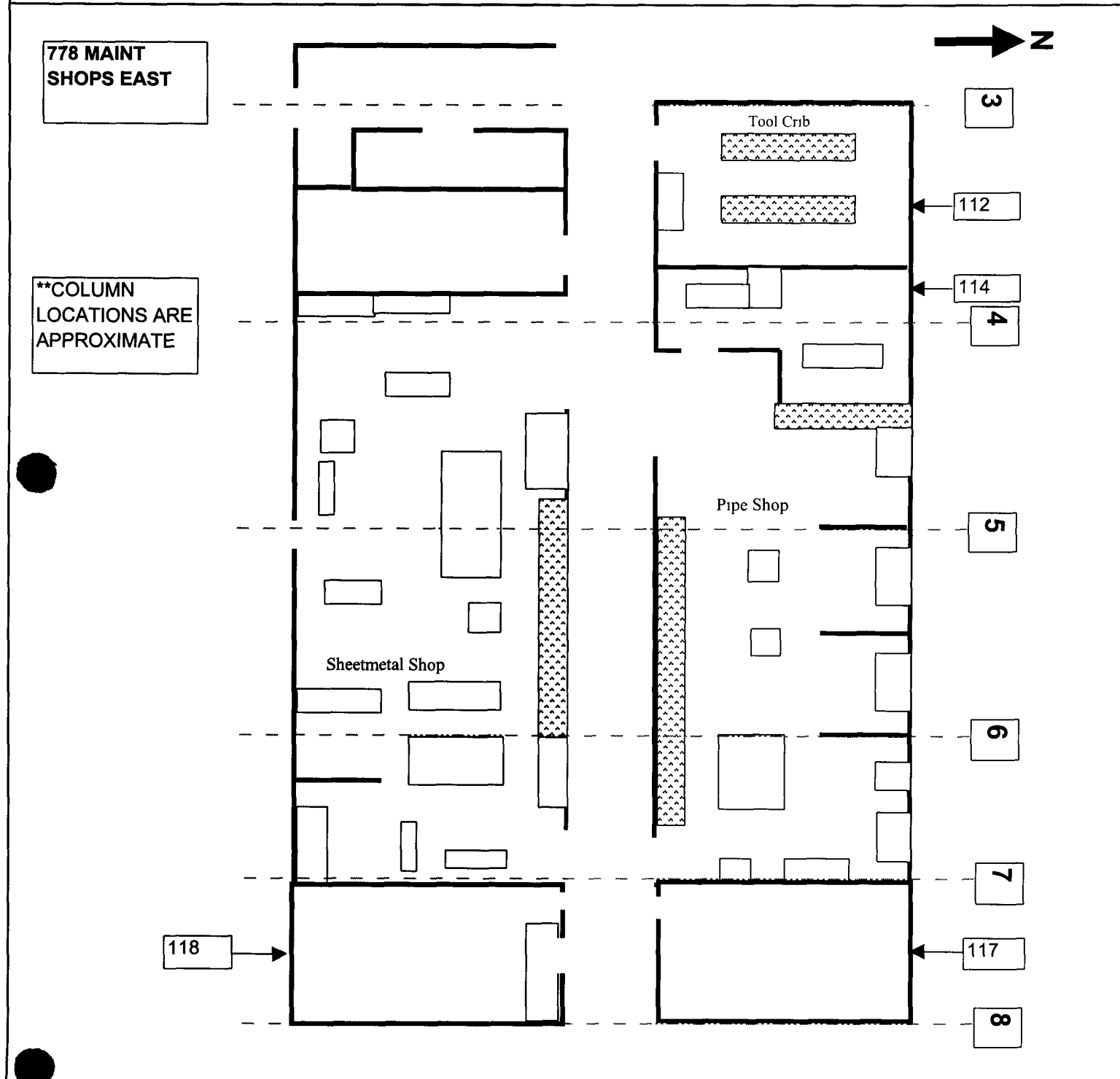
Signature

Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS



905

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____ Time _____

RCT _____ / _____ / _____

Print name

Signature

Emp #

RCT _____ / _____ / _____

Print name

Signature

Emp #

PRL #. _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____ RS Supervision _____ / _____ / _____

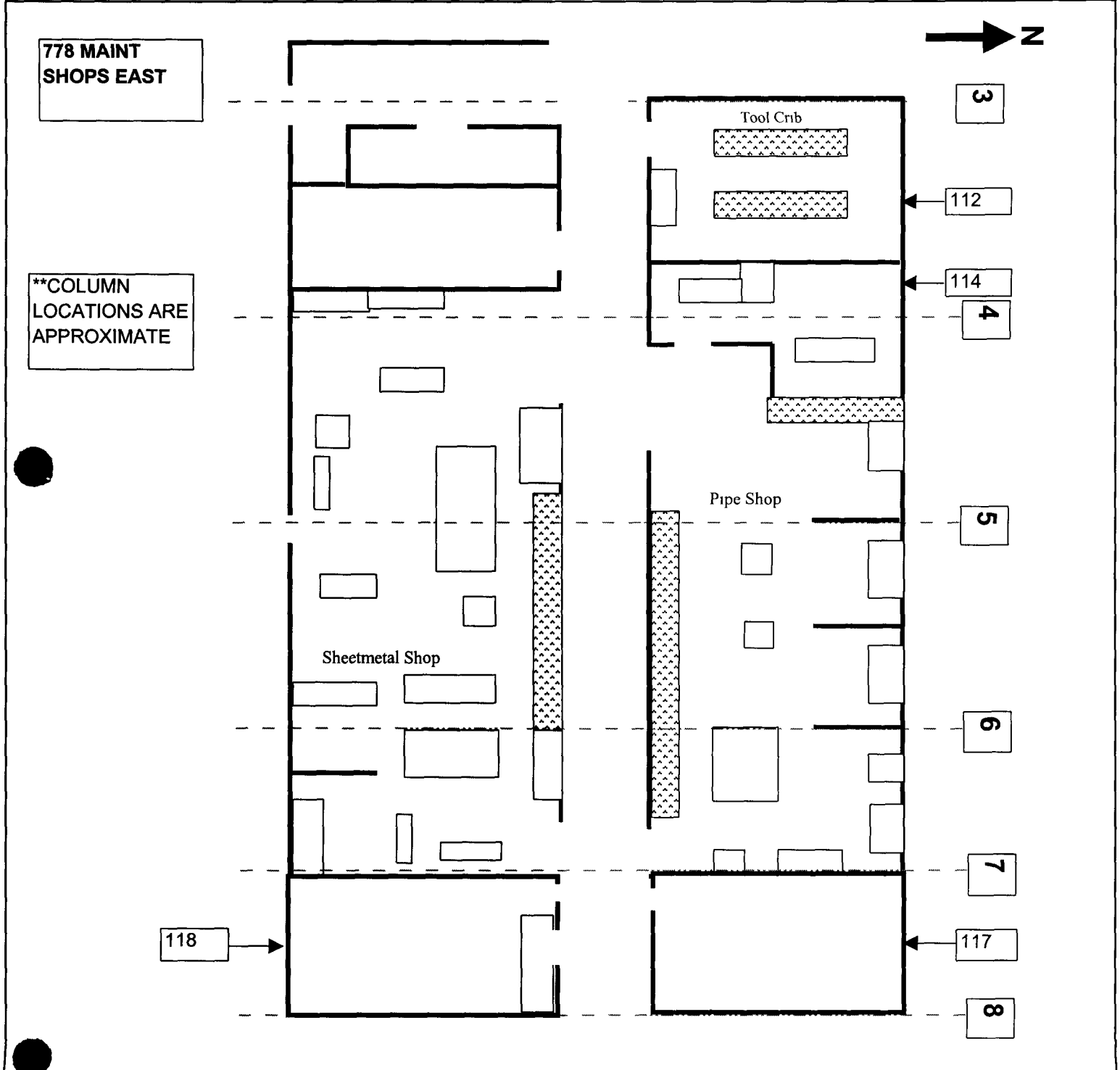
Print Name _____ Signature _____ Emp # _____

906

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____ Time _____

 RCT _____ / _____ / _____
 Print name Signature Emp #

 RCT _____ / _____ / _____
 Print name Signature Emp #

PRL #. _____

Comments. _____

SURVEY RESULTS

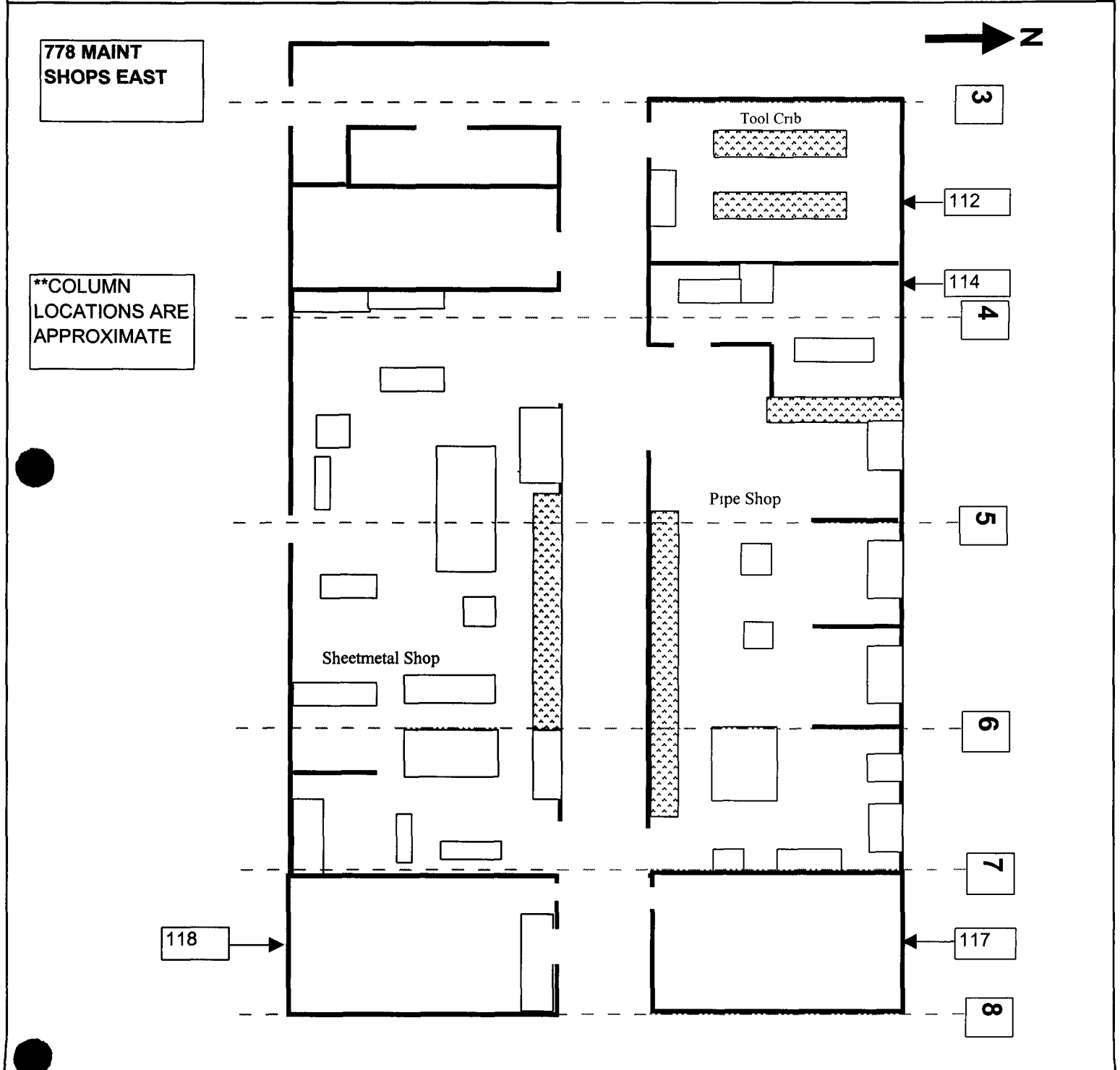
Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

 Date Reviewed _____ RS Supervision _____ / _____
 Print Name Signature Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS



909

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____

Time _____

RCT _____

Print name _____

Signature _____

Emp # _____

RCT _____

Print name _____

Signature _____

Emp # _____

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____

RS Supervision _____

Print Name _____

Signature _____

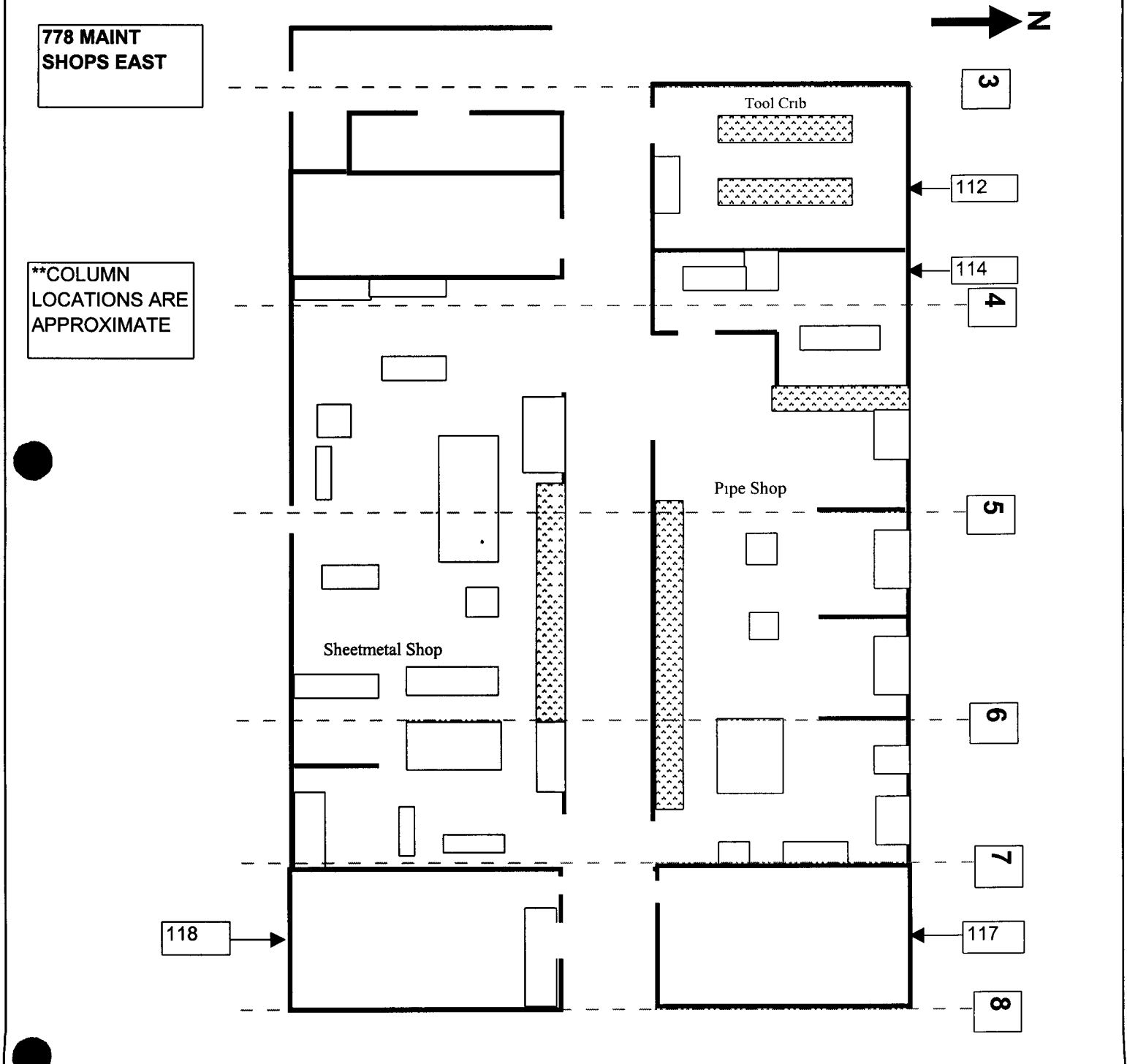
Emp # _____

910

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____

Time _____

RCT _____

Print name _____

Signature _____

Emp # _____

RCT _____

Print name _____

Signature _____

Emp # _____

PRL # _____

Comments. _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____

RS Supervision _____

Print Name _____

Signature _____

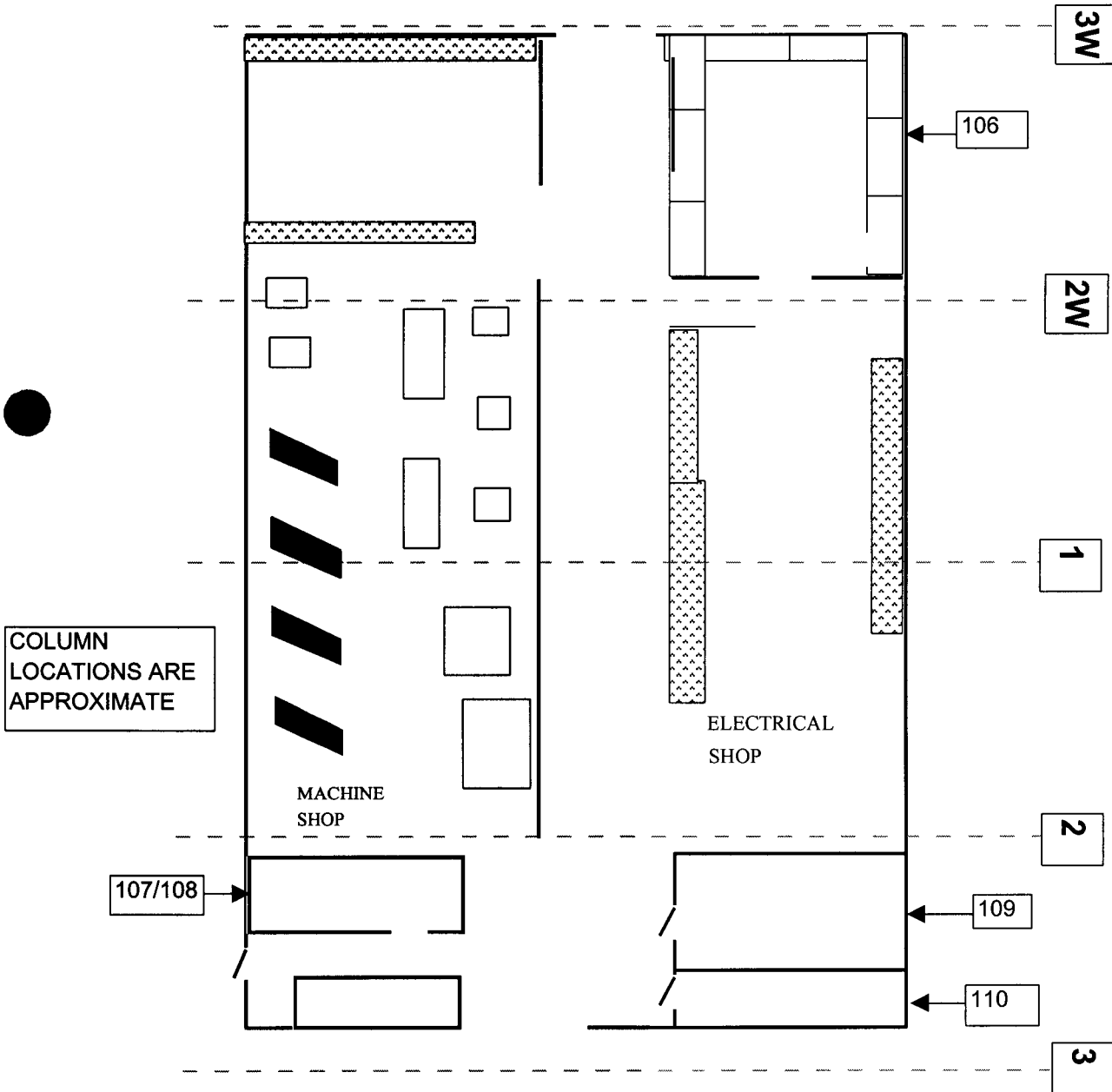
Emp # _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

778 MAINT. SHOPS WEST



913

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____ Time _____

 RCT _____ / _____
 Print name Signature Emp #

 RCT _____ / _____
 Print name Signature Emp #

PRL # _____

Comments _____

SURVEY RESULTS

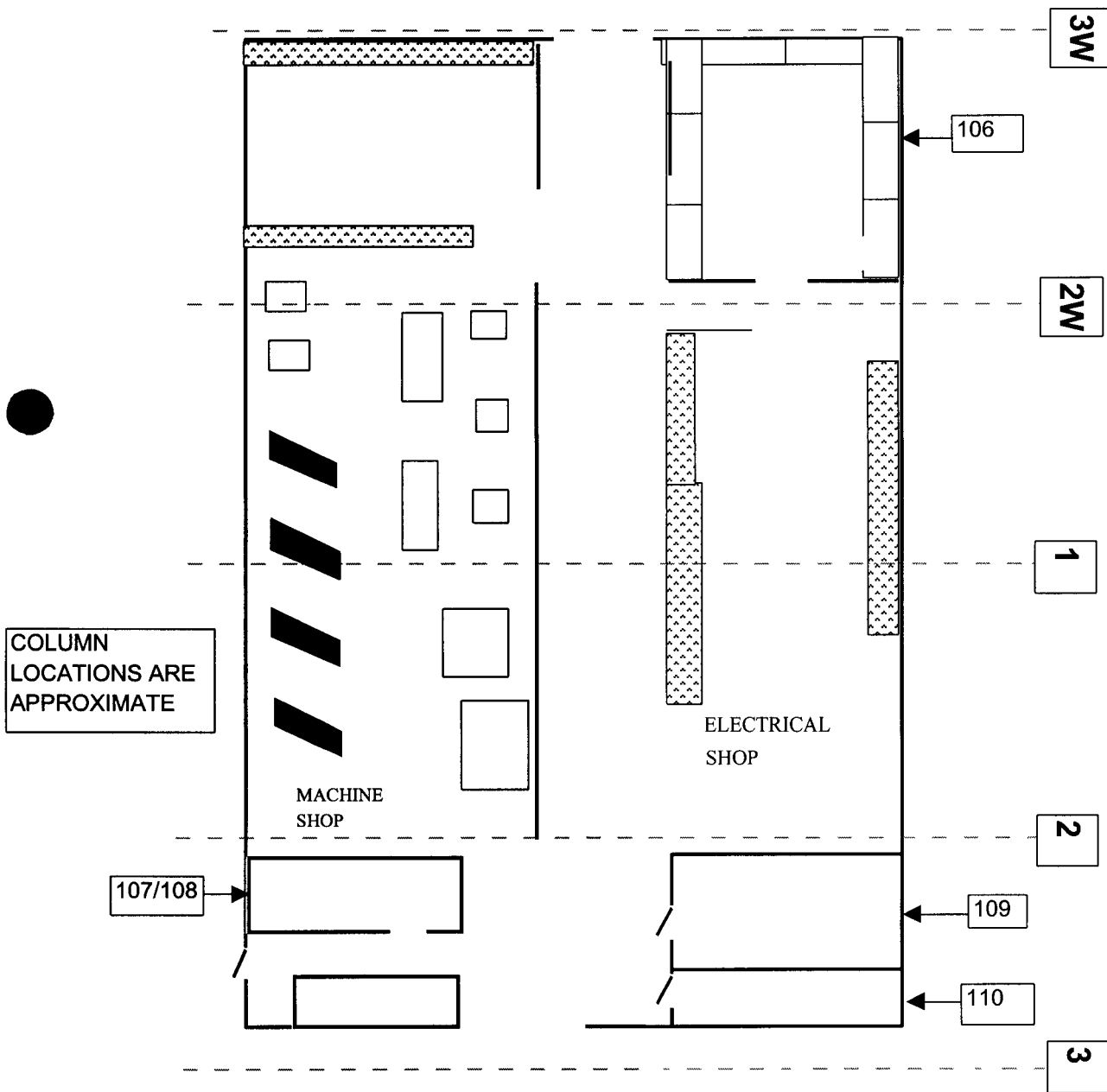
Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

 Date Reviewed _____ RS Supervision _____
 Print Name Signature Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

**RADIOLOGICAL SAFETY
DRAWING SHOWING SURVEY POINTS**

778 MAINT. SHOPS WEST



915

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type CONTAMINATION

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____ Time _____

RCT _____ / _____ / _____

Print name _____ Signature _____ Emp # _____

RCT _____ / _____ / _____

Print name _____ Signature _____ Emp # _____

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
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16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____ RS Supervision. _____

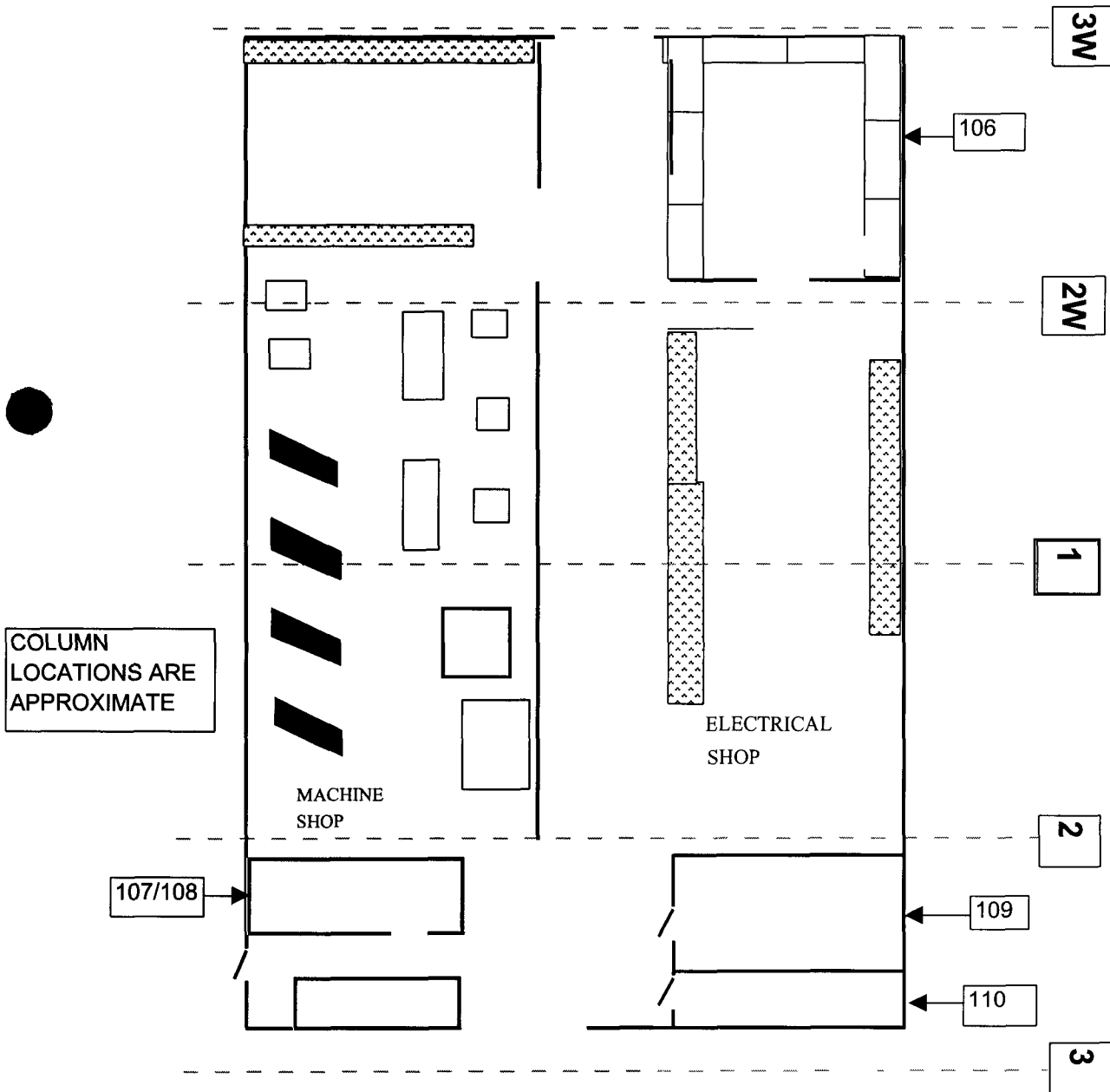
Print Name _____ Signature _____ Emp # _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

778 MAINT. SHOPS WEST



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____ Time _____

 RCT _____ / _____
 Print name Signature Emp #

 RCT _____ / _____
 Print name Signature Emp #

PRL # _____

Comments. _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
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11						31					
12						32					
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15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

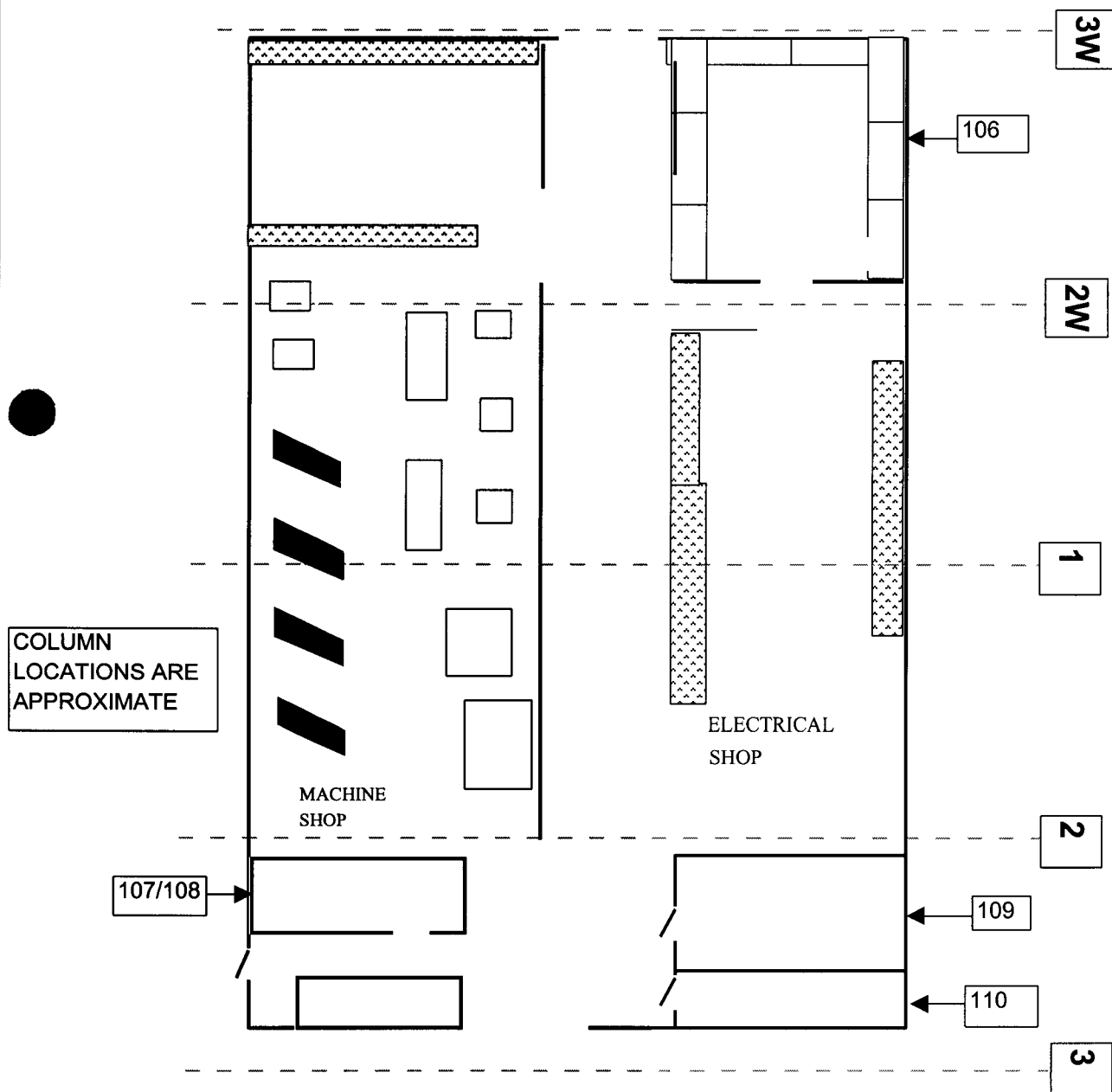
 Date Reviewed _____ RS Supervision. _____
 Print Name Signature Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

778 MAINT. SHOPS WEST



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____ Time _____

 RCT _____ / _____
 Print name Signature Emp #

 RCT _____ / _____
 Print name Signature Emp #

PRL # _____

Comments* _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

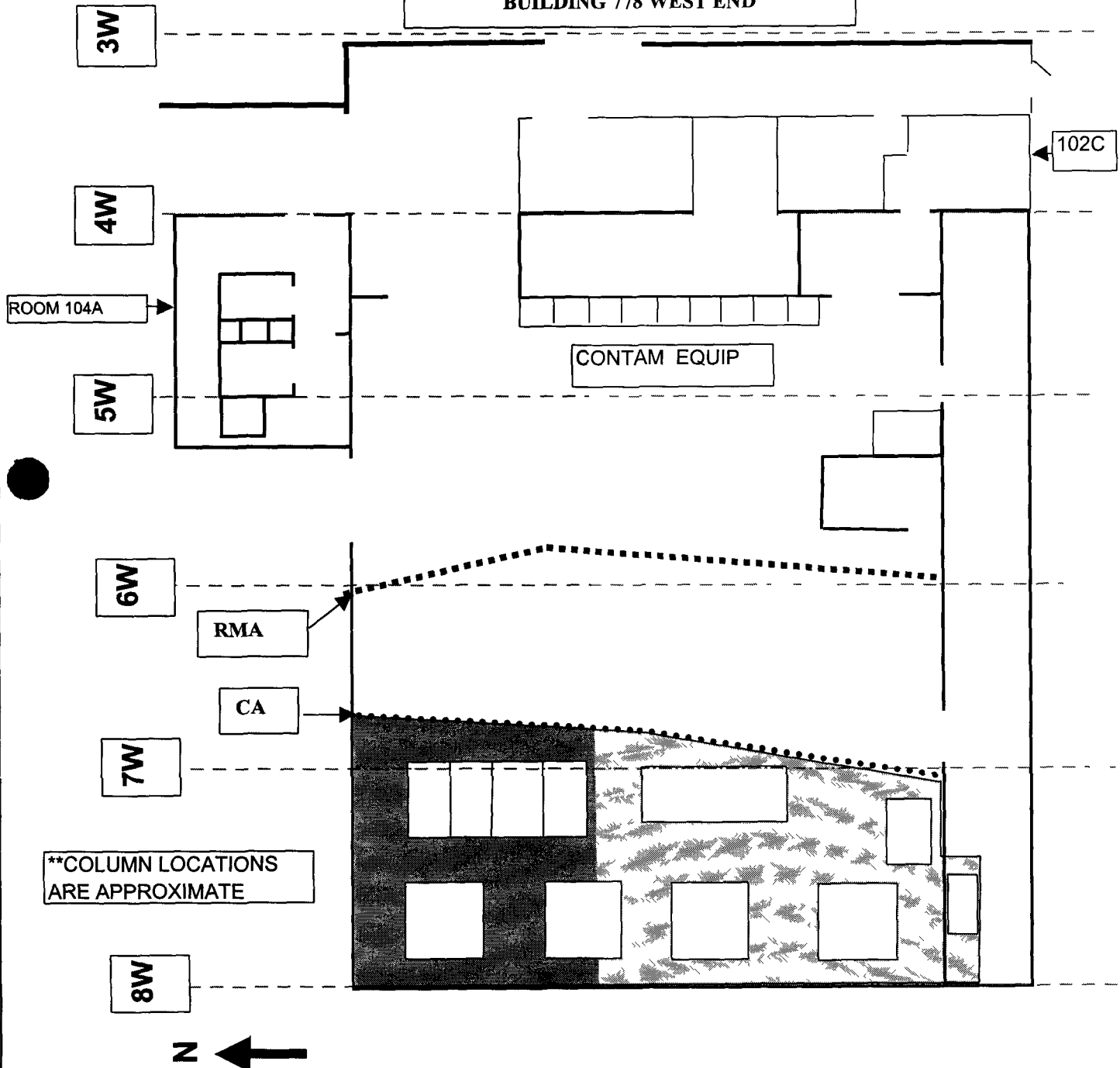
 Date Reviewed _____ RS Supervision _____ / _____
 Print Name Signature Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

BUILDING 778 WEST END



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____ Time _____

RCT _____ / _____ / _____

Print name _____ Signature _____ Emp # _____

RCT _____ / _____ / _____

Print name _____ Signature _____ Emp # _____

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

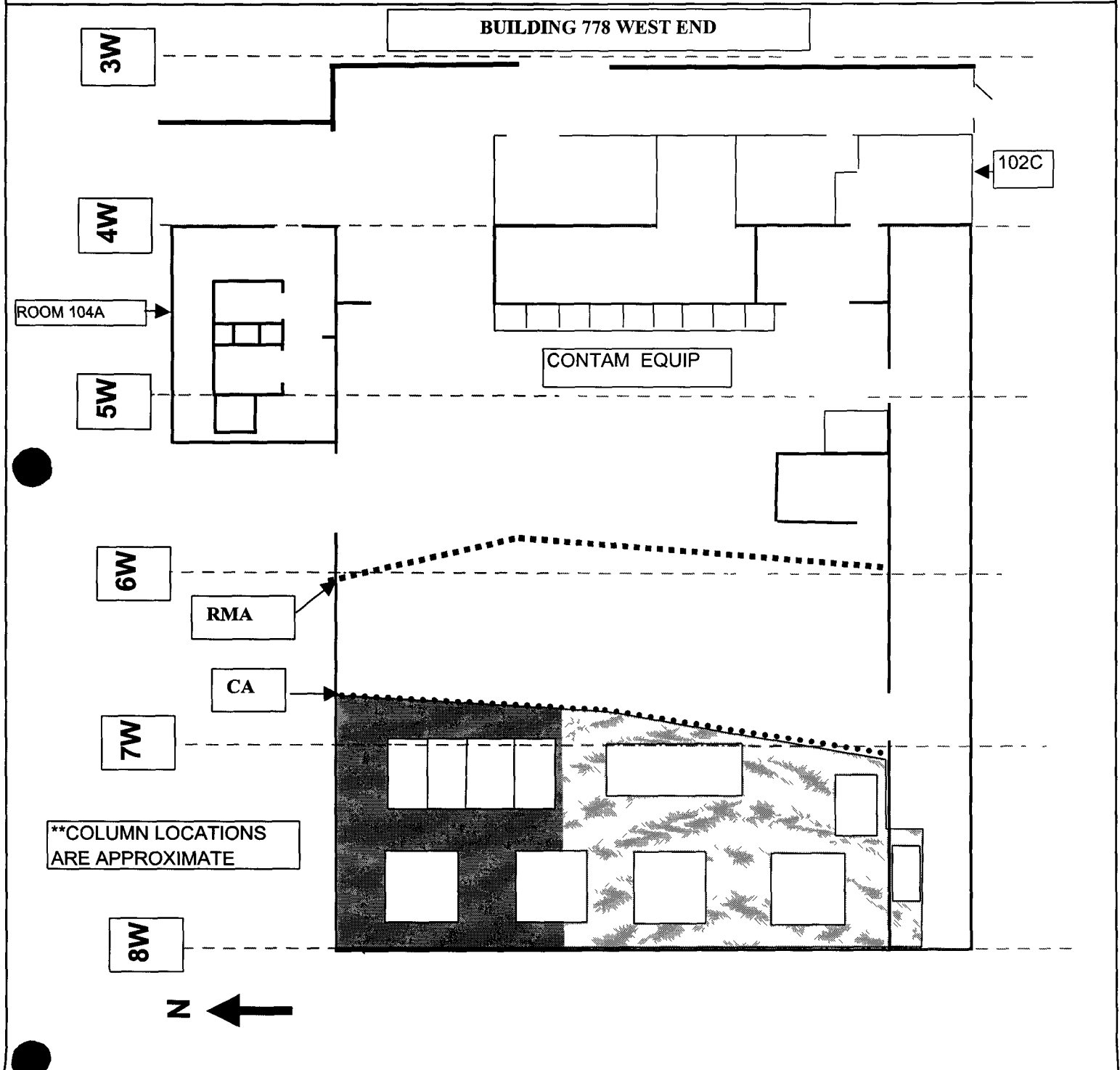
Date Reviewed _____ RS Supervision _____

Print Name _____ Signature _____ Emp # _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS



923

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____ Time _____

RCT _____ / _____ / _____

Print name

Signature

Emp #

RCT _____ / _____ / _____

Print name

Signature

Emp #

PRL # _____

Comments. _____

SURVEY RESULTS

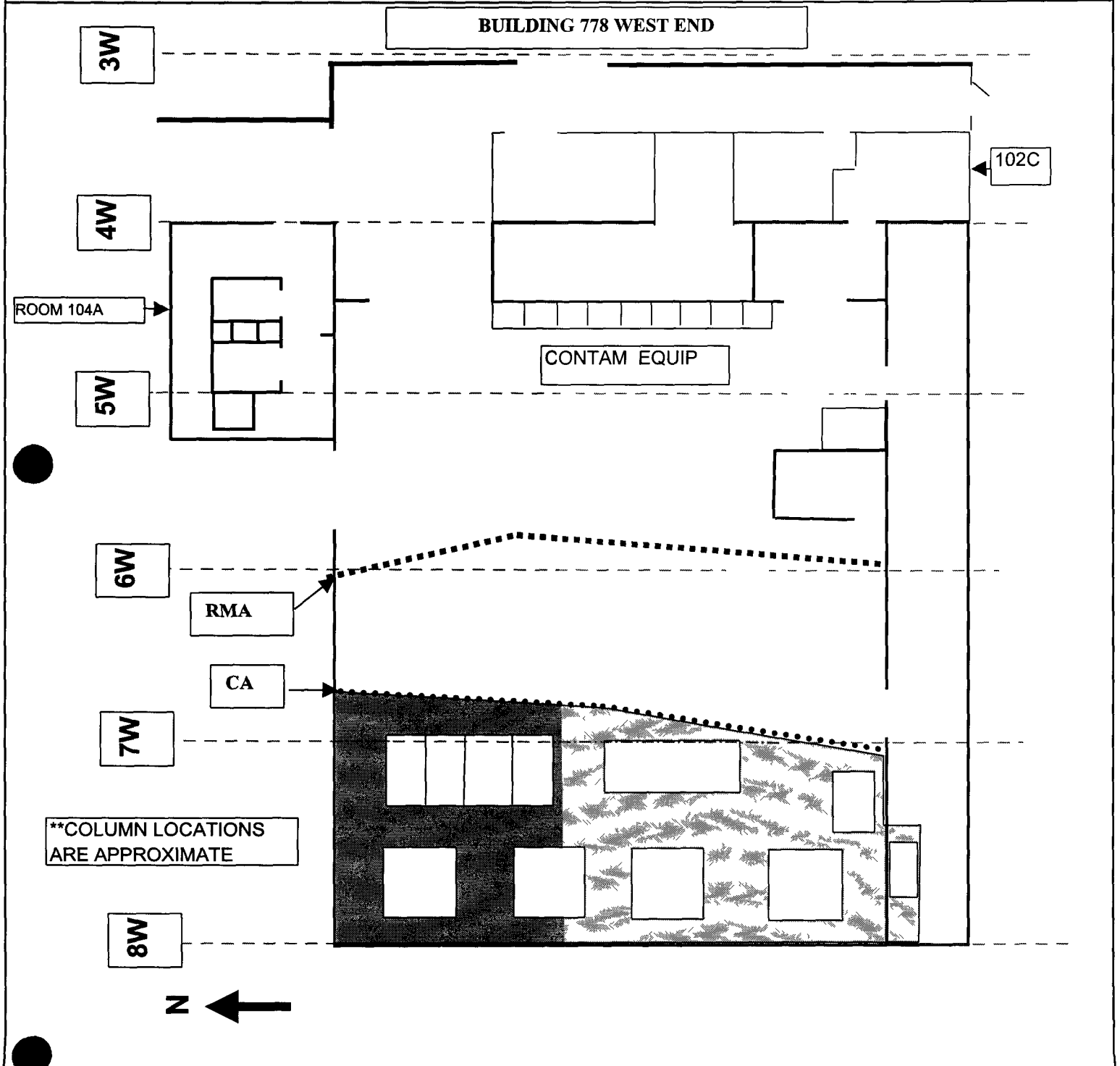
Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____ RS Supervision _____ / _____
 Print Name _____ Signature _____ Emp # _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS



925

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____ Time _____

RCT _____ / _____ / _____

Print name _____ Signature _____ Emp # _____

RCT _____ / _____ / _____

Print name _____ Signature _____ Emp # _____

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

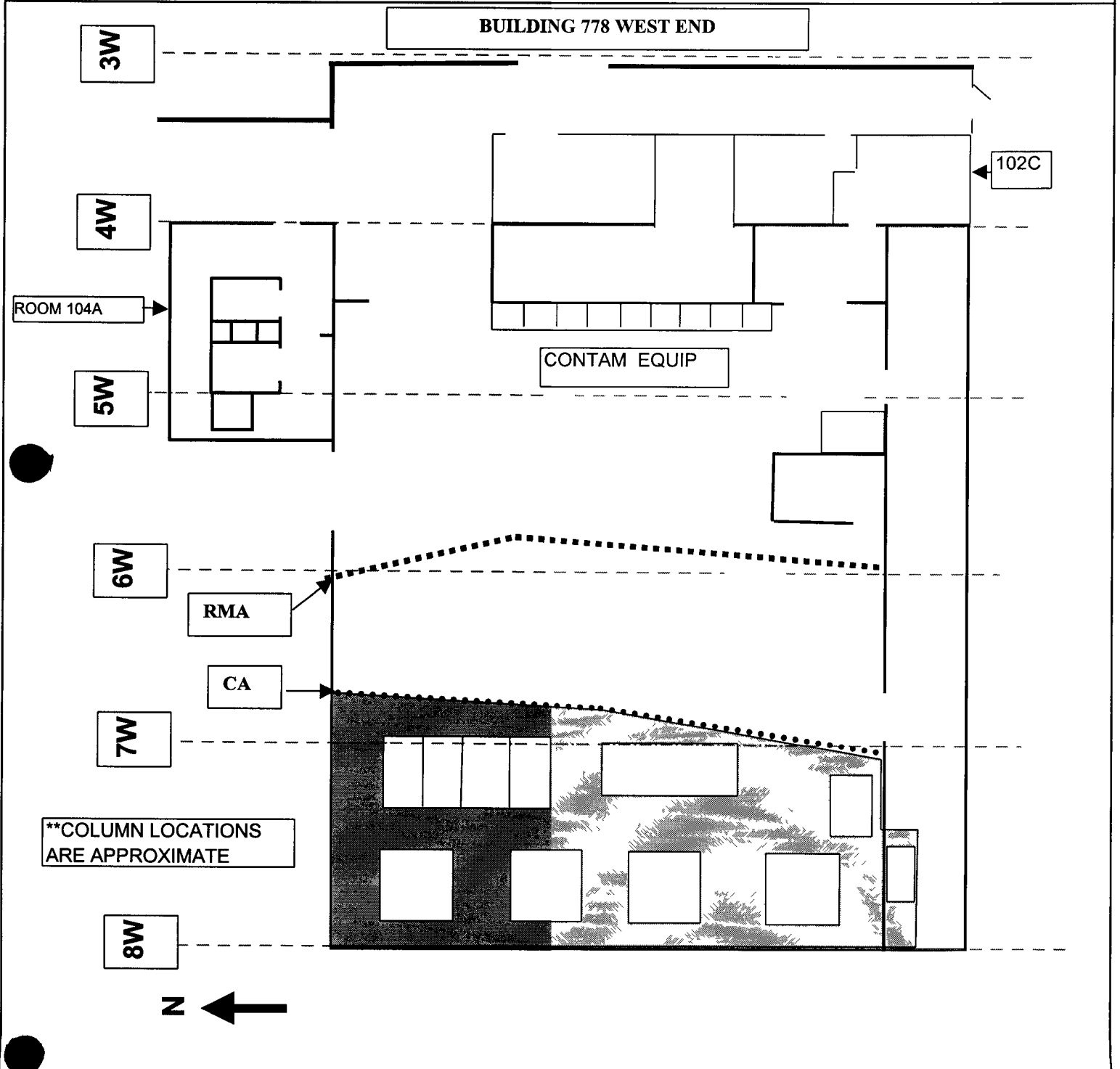
Date Reviewed _____ RS Supervision _____

Print Name _____ Signature _____ Emp # _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS



927

ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>844</u>	Serial # <u>1054</u>	Serial # <u>3265</u>
Cal Due <u>8-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>7-3-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.5 cpm</u>	Bkg <u>0.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>100%</u>
MDA <u>12.9 dpm</u>	MDA <u>15.6 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NE Tech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>833</u>	Serial # <u>7</u>	Serial # <u>2307</u>
Cal Due <u>7-14-00</u>	Cal Due <u>8</u>	Cal Due <u>7-12-00</u>
Bkg <u>46 cpm</u>	Bkg <u> </u>	Bkg <u>2.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>1940</u>
MDA <u>104.5 dpm</u>	MDA <u> </u>	MDA <u>94 dpm</u>

Survey Type. Contamination

Building 778
 Location West Area Survey Area B
 Purpose Reconnaissance Level Characterization

RWP # 007071204Date 4-17-00 Time Days

RCT R. Lincoln R. Lincoln
 Print name / Signature

RCT S. Jankowski S. Jankowski
 Print name / Signature

Comments Floor / Walls < 2 meters Unbiased survey points 195
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Wall < 2m	0	-28	24	16	F	0	40	48
2	F	0	-4	6	17	F	0	-16	30
3	F	3	-4	18	18	Wall < 2m	0	52	18
4	Wall < 2m	0	-32	24	19	F	0	-16	0
5	" "	0	0	24	20	Wall < 2m	0	20	30
6	" "	0	4	48	21	" "	0	36	36
7	F	0	-16	30	22	F	0	-16	18
8	F	0	0	12	23	F	0	24	30
9	Wall < 2m	0	-16	12	24	Wall < 2m	3	28	30
10	" "	0	-40	36	25	F	0	-28	30
11	" "	0	-12	30	26	Wall < 2m	0	-4	24
12	F	0	-4	30	27	" "	0	-4	24
13	F	0	-8	18	28	F	0	20	18
14	Wall < 2m	0	8	24	29	F	0	-4	6
15	" "	0	0	18	30	Wall < 2m	0	16	0

Date Reviewed 5-2-00 RS Supervision

Print Name

Signature

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

245

Drawing Showing Survey Points

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
31	Wall < 2m	0	-32	36	61				
32	" "	0	4	6	62				
33	" "	0	-20	18	63				
34	F	0	28	0	64				
35	F	0	-16	18	65				
36	F	0	-16	0	66				
37	F	0	20	24	67				
38	Wall < 2m	3	8	18	68				
39	" "	0	-28	24	69				
40	F	0	-20	30	70				
41	F	0	-12	66	71				
42	Wall < 2m	0	4	30	72				
43	" "	3	-24	42	73				
44	" "	0	8	66	74				
45	F	0	-8	54	75				
46	F	0	-36	66	76				
47	F	0	-4	18	77				
48	F	0	-24	24	78				
49	F	0	-16	12	79				
50	Wall < 2m	3	-20	24	80				
51	" "	3	12	30	81				
52	F	3	-8	24	82				
53	F	0	4	60	83				
54	F	0	-24	12	84				
55	Wall < 2m	0	-44	36	85				
56	" "	0	0	36	86				
57	NA				87				
58					88				
59					89				
60					90				

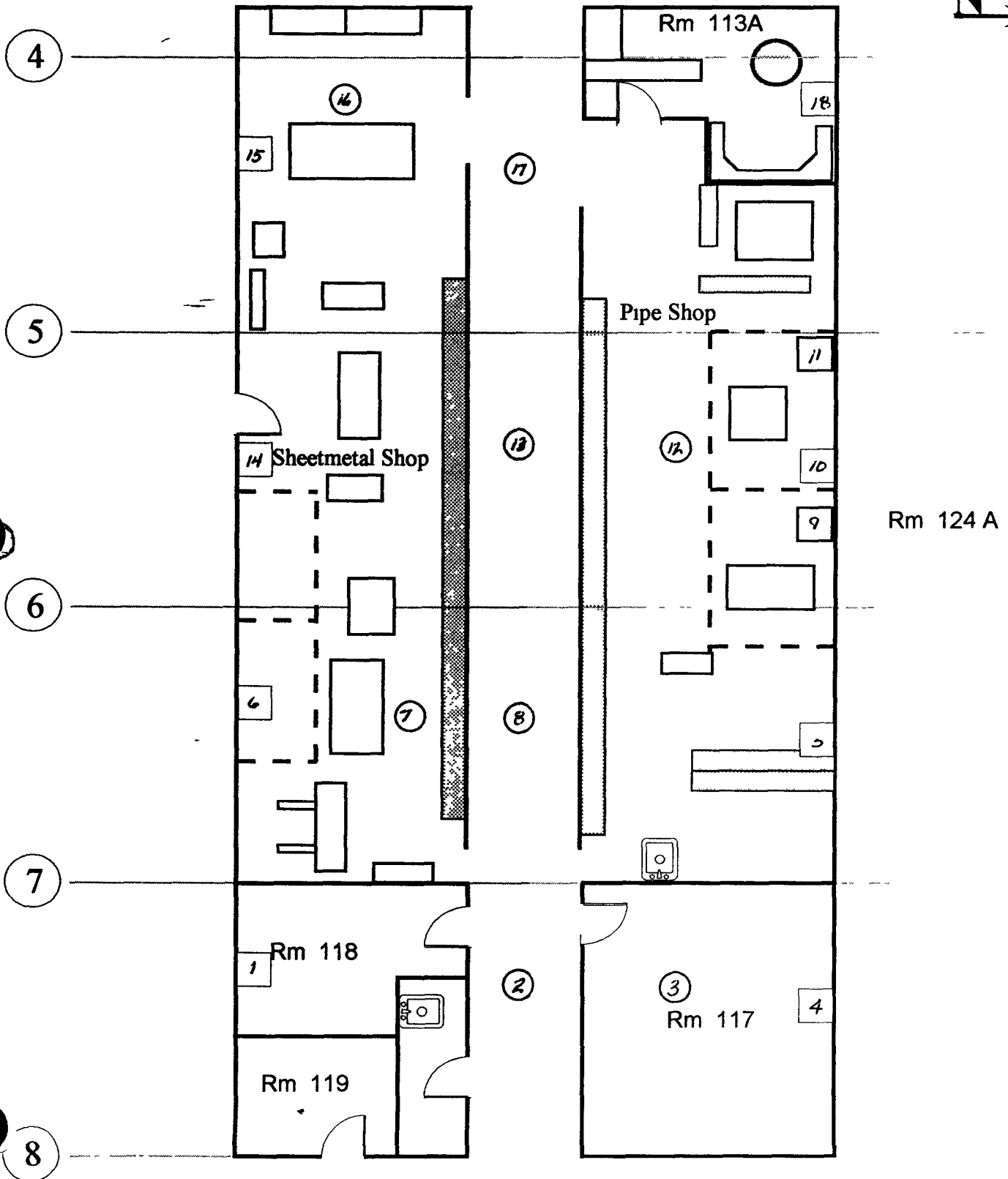
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

395

Drawing Showing Survey Points

Building 778



930

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

1.9.5

Drawing Showing Survey Points

Building 778



3W

2W

1

2

3

38

37

36

Rm 106

31

33

35

29

Electrical Shop

30

32

Machine Shop

34

28

27

24

Rm 118

25

23

26

20

Rm 113B

19

22

21

ROCK ISLAND ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

545

Drawing Showing Survey Points

Building 778



8W

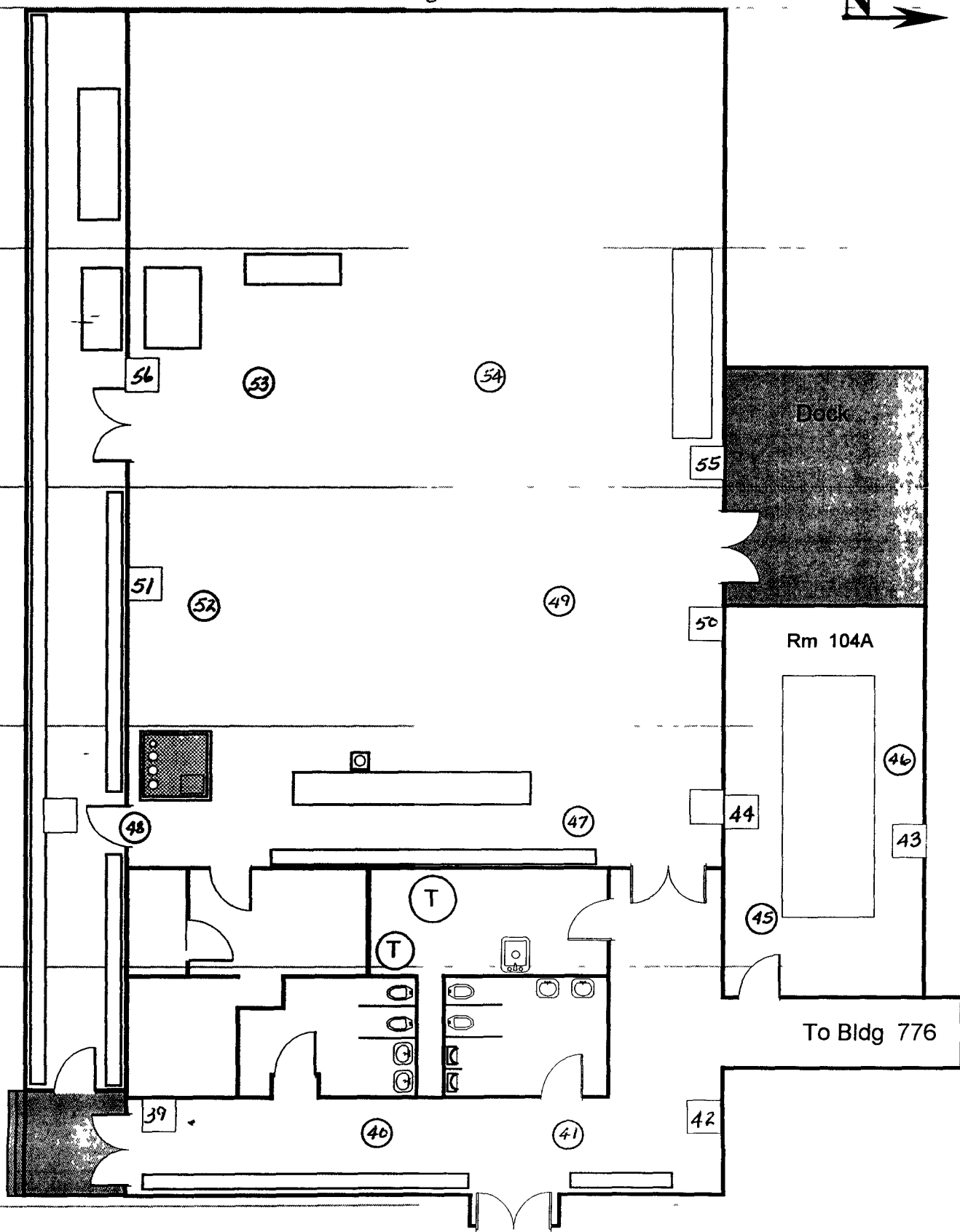
7W

6W

5W

4W

3W



Back

Rm 104A

To Bldg 776

ROCKWELL ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

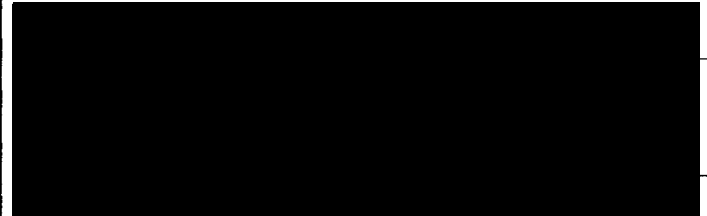
Mfg. Eberline	Mfg. Eberline	Mfg. NeTech.
Model Sac-4	Model Sac-4	Model Electra
Serial # 846	Serial # 1054	Serial # 2166
Cal Due 8-15-00	Cal Due 8-23-00	Cal Due 9-22-00
Bkg 0.0 cpm	Bkg 0.4 cpm	Bkg 0.0 cpm
Efficiency 33%	Efficiency 33%	Efficiency 1700
MDA 8.2 dpm	MDA 14.8 dpm	MDA 94 dpm
Mfg. Eberline	Mfg. Eberline	Mfg.
Model BC-4	Model BC-4	Model
Serial # 959	Serial # 833	Serial #
Cal Due 7-19-00	Cal Due 7-14-00	Cal Due
Bkg 43 cpm	Bkg 45 cpm	Bkg.
Efficiency 25%	Efficiency 25%	Efficiency
MDA 101.3 dpm	MDA 103.4 dpm	MDA

Survey Type Contamination

Building 778
 Location West interior Survey Area B
 Purpose Reconnaissance Level Characterization

RWP # 00707 1204

Date 4-24-00 Time Days



Comments Floor / Walls < 2 meters Biased survey points 1/4
 1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Rm 119 Floor Drain	0	-60	54	16	N/A			
2	Rm 117 Floor Drain	3	-52	18	17				
3	Floor in front of Rm 104A Plenum Door	0	-8	78	18				
4	Rm 104A Floor Drain	0	-20	32	19				
5	Front of Sheetmetal Shop Floor Drain	0	12	18	20				
6	Rm 108 Door Floor Drain	0	-12	36	21				
7	At Doorway #100	0	-44	12	22				
8	Sheetmetal Shop Chipped Concrete	6	-12	12	23				
9	Door 119 Walkway Floor Drain	0	-20	12	24				
10	At Doorway #222	3	0	18	25				
11	N/A				26				
12					27				
13					28				
14					29				
15									

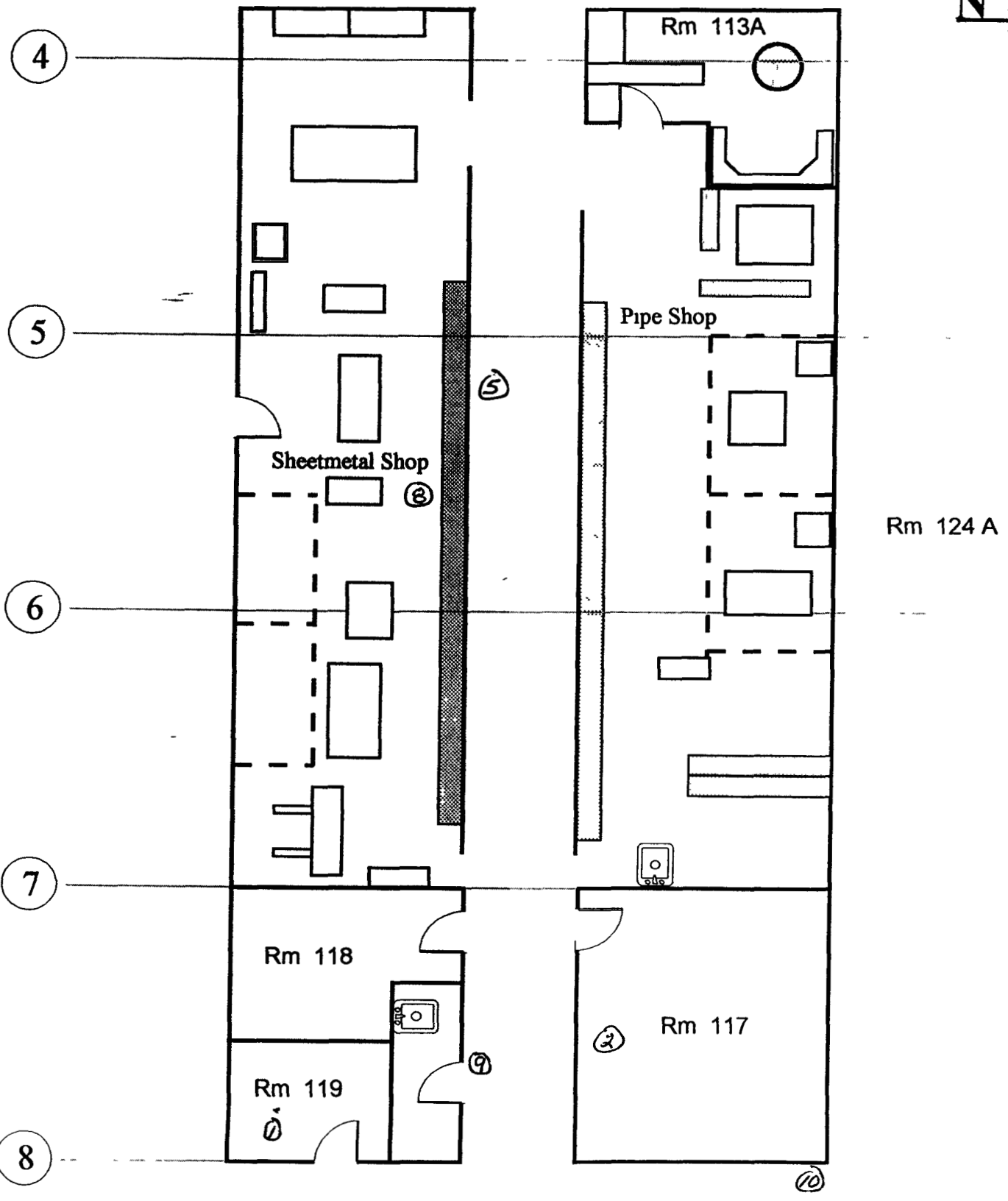
Date Reviewed. 5-2-00 RS Supervision:

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

244

Building 778



ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

344

Drawing Showing Survey Points

Building 778



3W

2W

1

2

3

Rm 106

Electrical Shop

Machine Shop

Rm 118

Rm 113B

ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

444

Drawing Showing Survey Points

Building 778



8W

7W

6W

5W

4W

3W

Rm 104A

③

④

⑦

T

T

To Bldg 776

ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg. Eberline	Mfg. Eberline	Mfg. NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 846	Serial # 1054	Serial # 2166
Cal Due 8-15-00	Cal Due 8-23-00	Cal Due 9-22-00
Bkg. 0.0 cpm	Bkg. 0.4 cpm	Bkg. 2.0 ^{RL} cpm
Efficiency 33%	Efficiency 33%	Efficiency 1700
MDA 8.2 dpm	MDA 14.8 dpm	MDA 94 dpm
Mfg. Eberline	Mfg. Eberline	Mfg. NeTech
Model BC-4	Model BC-4	Model Electra
Serial # 959	Serial # 833	Serial # 3120
Cal Due 7-19-00	Cal Due 7-14-00	Cal Due 4-26-00
Bkg. 4.3 cpm	Bkg. 4.5 cpm	Bkg. 2.0
Efficiency 25%	Efficiency 25%	Efficiency 2109
MDA 101.3 dpm	MDA 103.4 dpm	MDA 94 dpm

Survey Type Contamination

Building 778
 Location West Interior Survey Area B
 Purpose Reconnaissance Level Characterization

RWP # 00 707 1204

Date 4-19 4-20 4-25-00 Time Days

RCT

RCT

Comments Equipment Biased survey points

1 of 4

1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Rm 119 Sink	0	-12	60	16	Sheet metal Shop Drill Press	0	-8	24
2	Rm 117 Tank Flange	0	-24	24	17	Rm 108 Hallway Cabinets	0	-12	18
3	Pipe Shop Ceiling Hood	0	0	12	18	Machine Shop Band Saw	0	4	12
4	Rm 104A Pump Housing	3	-12	54	19	Machine Shop Engine Lathe	0	-48	18
5	Rm 104A Vacuum Filter	6	-40	6	20	Machine Shop Bridge Port Lathe	0	-20	12
6	Rm 104A Plenum Door	0	-8	18	21	Paint Shop Cabinets	0	-32	12
7	Rm 104A Plenum Door	0	24	36	22	Electrical Shop Steel Countertop	3	-28	6
8	Rm 104A Top of Plenum	6	-24	156	23	Electrical Shop Wall vent	0	-40	12
9	Rm 104A Pipe Top of Plenum	0	-8	36	24	Electrical Shop Cabinets	0	-4	6
10	Rm 104A Top of Plenum	3	-12	90	25	Hallway Electrical Panel	0	-32	0
11	Rm 104A Plenum Squirrel Cage	0	-24	24	26	Door 119 Radiometric scanner	0	4	30
12	Rm 104A Top Electrical Box	0	36	54	27	Rm 117 Piping	3	-52	18
13	Rm 104A Plenum Door	0	-28	24	28	Walkway Electrical Box	0	-44	0
14	Sheet metal Shop Foot Pedal Press	0	-56	6	29	Paint Shop Hood	0	0	12
15	Sheet metal Shop Steel Table	0	4						

Date Reviewed: 5-2-00 RS Supervision:

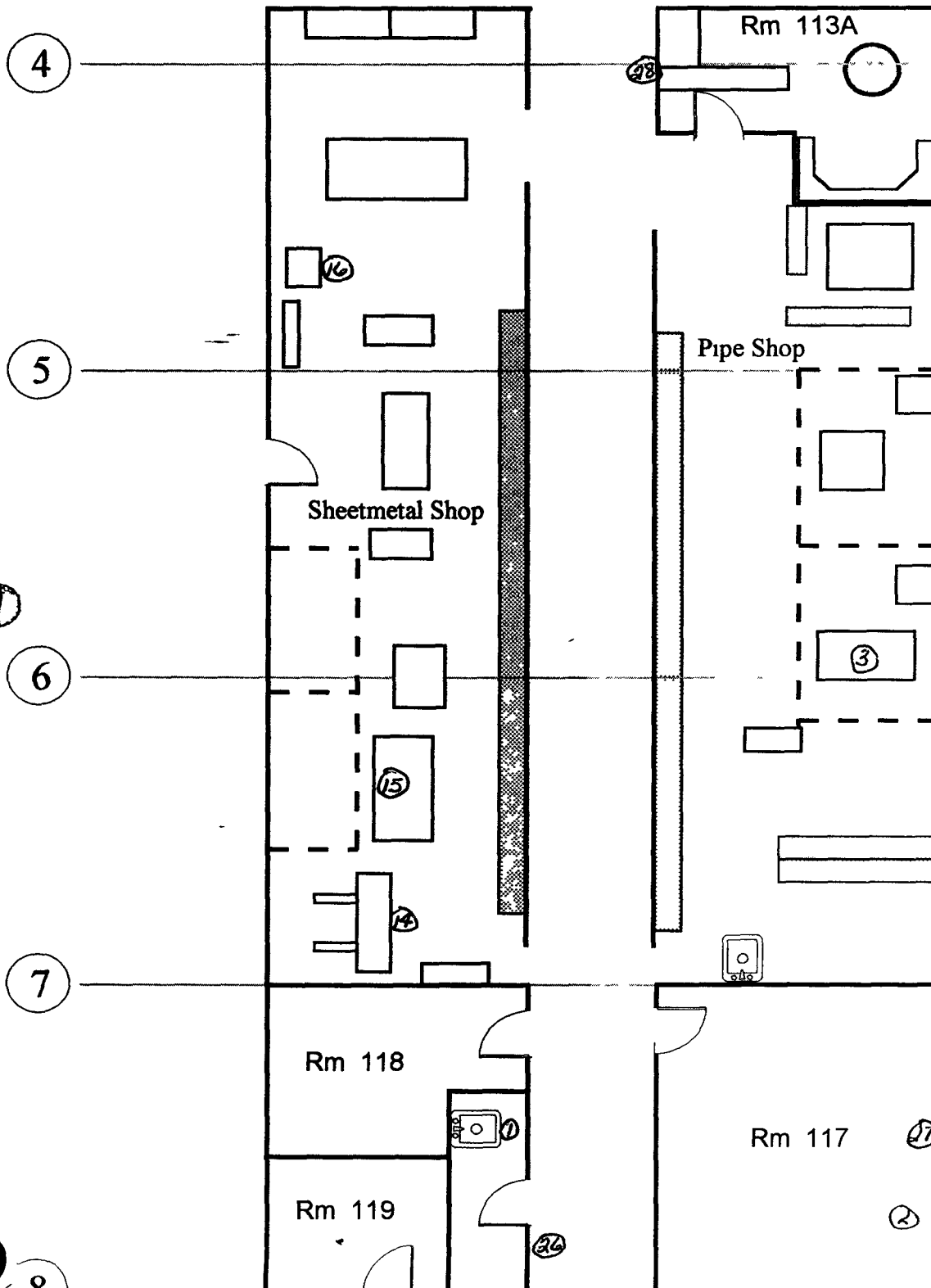
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

2 of 4

Drawing Showing Survey Points

Building 778



Rm 124 A

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

3-24

Building 778



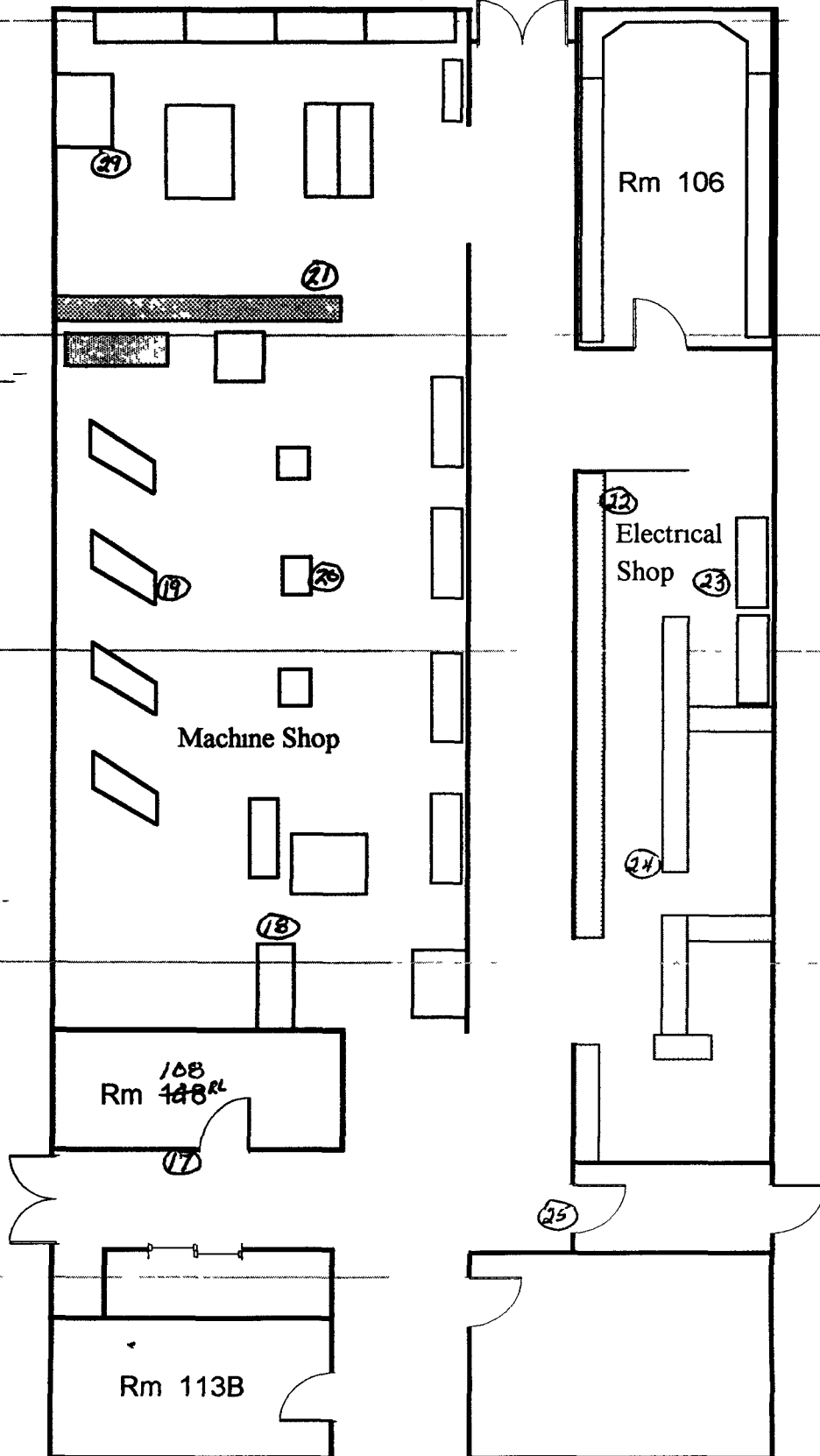
3W

2W

1

2

3



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

4-84

Building 778



8W

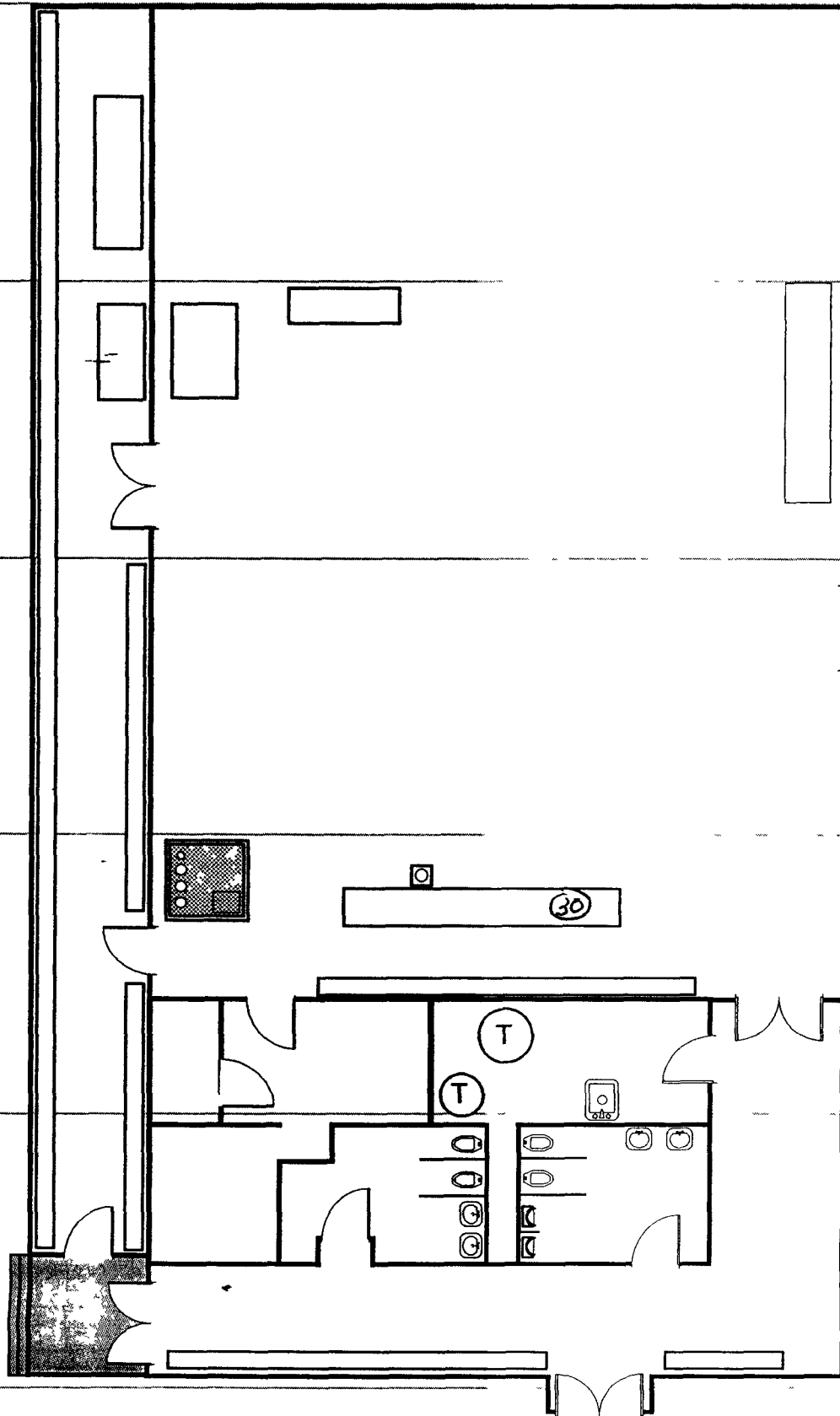
7W

6W

5W

4W

3W



④ Rm 104A

To Bldg 776

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>1233</u>
Cal Due <u>8-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>2-11-00</u>
Bkg <u>0.0 cpm</u>	Bkg <u>0.3 cpm</u>	Bkg <u>4.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>2063</u>
MDA <u>8.2 dpm</u>	MDA <u>13.9 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>959</u>	Serial # <u>833</u>	Serial # <u>1233</u>
Cal Due <u>7-19-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>2-11-00</u>
Bkg <u>43 cpm</u>	Bkg <u>43 cpm</u>	Bkg <u>4.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>2063</u>
MDA <u>101.3 dpm</u>	MDA <u>101.3 dpm</u>	MDA <u>94 dpm</u>

Survey Type Contamination

Building 778
 Location West Interior Survey Area B
 Purpose Reconnaissance Level Characterization

RWP # 00767 1204Date 4-26 4-27-00 Time DaysComments Ceiling / Walls > 2 meters Biased survey points1 minute pats and swipes See map for locations1/8 4**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Wall > 2m	3	128	6	16	Wall > 2m	0	-12	18
2	" "	0	4	18	17	Wall > 2m	0	-8	12
3	" "	0	-24	6	18	Ceiling	0	-36	36
4	" "	0	-20	18	19	Ceiling	0	8	30
5	" "	0	-16	24	20	Wall > 2m	0	0	24
6	" "	0	-12	12	21	Wall > 2m	0	-12	42
7	" "	0	-8	36	22	Wall > 2m	9	-12	66
8	" "	3	-8	42	23	Wall > 2m	0	24	24
9	" "	0	-28	12	24	NA			
10	" "	3	-4	6	25				
11	" "	0	-12	24	26				
12	" "	0	-20	36	27				
13	" "	0	-10	18	28				
14	" "	3	-12	24	29				
15	" "	0	-28						

Date Reviewed 5-2-00 RS Supervision:

RADIOLOGICAL SAFETY

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

2 of 4

Building 778



4

6

Rm 113A

5

7

Pipe Shop

5

Sheetmetal Shop

4

Rm 124 A

6

2

3

7

Rm 118

Rm 117

1

Rm 119

8

942

ENVIRONMENTAL TECHNOLOGY SITE
RADIOLOGICAL SAFETY

Drawing Showing Survey Points

3 of 4



Building 778

3W

2W

1

2

3

15

16

17

18

9

Machine Shop

Rm 118

Rm 113B

Rm 106

13

Electrical Shop

12

11

10

943

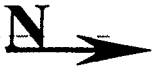
RECONSTRUCTION ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

4 of 4

Building 778



8W

7W

6W

5W

4W

3W

21

23

Rm 104A

20

22

To Bldg 776

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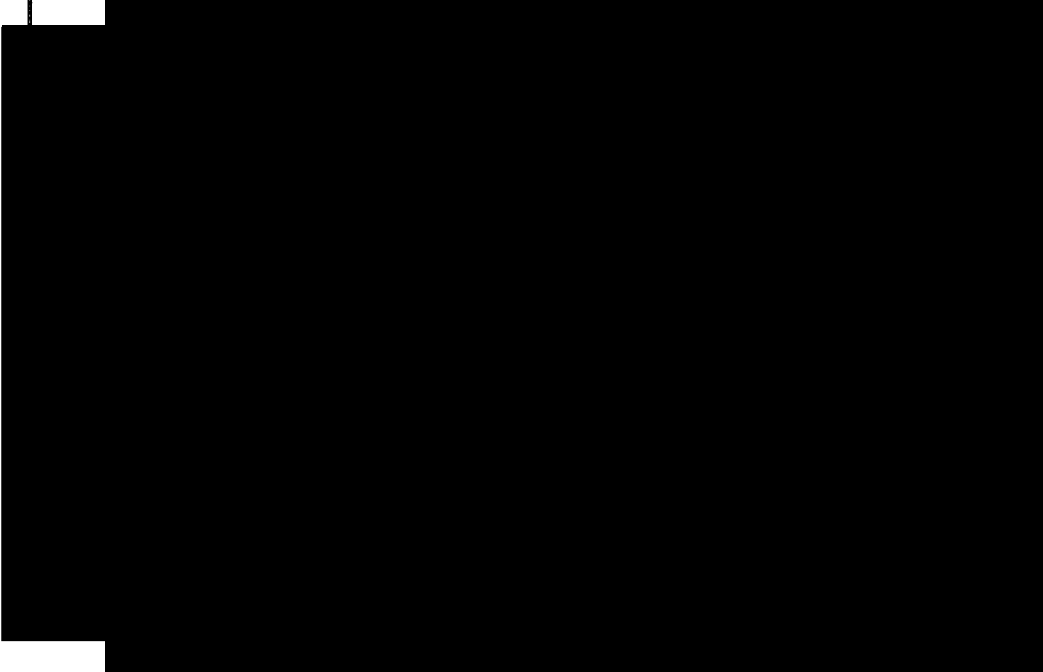
944

[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 2000-0002		Building (707) 778 WEST - CA		Type 2	
Survey Area C		Survey Unit N/A		Area (m²) ~106	
Survey Unit Description. POSTED CONTAMINATION AREA AT WEST END OF BUILDING 778 SURVEY AREA EXTENDS WEST FROM COLUMN 7W TO THE WEST END OF BUILDING IN ROOM 100 AREA IS FORMER RADIOLOGICAL LAUNDRY FACILITY					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	20	30	0	0	40
Building		Type		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 2000-0002	Building: (707) 778 WEST - CA	
Survey Area: C	Survey Unit: N/A	
Survey Unit Description: POSTED CONTAMINATION AREA AT WEST END OF BUILDING 778 SURVEY AREA EXTENDS WEST FROM COLUMN 7W TO THE WEST END OF BUILDING IN ROOM 100 AREA IS FORMER RADIOLOGICAL LAUNDRY FACILITY		
Building Information:		
Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/>		
Building Type Type 1 <input type="checkbox"/> Type 2 <input checked="" type="checkbox"/> Type 3 <input type="checkbox"/>		
Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____		
Justification for Classification: N/A		
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads		
Special Safety Precautions: Access to overhead, outdoor, or elevated areas may require additional controls or approvals from security Assure that appropriate notifications have been made		
Isolation Controls:		
Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>		
Labeling Requirements: NONE		
Survey Package Implementation:		
		
		Date 3/8/00
		N/A
		Date
		Date 3/9/00
		Date
		Date
		Date 5/15/00
		Date
		N/A
		Date
		Date 5/15/00
Date		

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID 2000-0002	Building (707) 778 WEST - CA	
Survey Area: C	Survey Unit N/A	
Survey Unit Description: POSTED CONTAMINATION AREA AT WEST END OF BUILDING 778 SURVEY AREA EXTENDS WEST FROM COLUMN 7W TO THE WEST END OF BUILDING IN ROOM 100 AREA IS FORMER RADIOLOGICAL LAUNDRY FACILITY		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>30 <u>uniformly distributed</u> survey points as follows</p> <ul style="list-style-type: none"> - 5 survey points per wall on N, S, W walls (15 points total) - 15 points on floors between/beneath fixed location equipment <p>10 <u>biased</u> survey points on floors/walls < 2 meters at locations such as</p> <ul style="list-style-type: none"> - Beneath laundry equipment - Near floor drains - Stained/discolored areas - Areas that are potentially contaminated based on past history/use or based upon RCT judgement <p>CEILINGS/WALLS > 2 meters</p> <p>10 <u>biased</u> surveys of ceilings and walls > 2 meters at areas likely to be contaminated</p> <ul style="list-style-type: none"> - 2 points per wall > 2 meters on N, S, W walls (6 points total) - 4 points on ceiling around ventilated laundry equipment or other suspect areas 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>
	<p>EQUIPMENT</p> <p>30 <u>biased</u> surveys of equipment as follows</p> <ul style="list-style-type: none"> - fixed laundry system and related equipment - laundry work benches - overhead piping/ductwork associated with laundry equipment 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 2000-0002		Building (707) 778 WEST - CA
Survey Area: C		Survey Unit N/A
Survey Unit Description: POSTED CONTAMINATION AREA AT WEST END OF BUILDING 778 SURVEY AREA EXTENDS WEST FROM COLUMN 7W TO THE WEST END OF BUILDING IN ROOM 100 AREA IS FORMER RADIOLOGICAL LAUNDRY FACILITY		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 40 1 m ² surface scans shall be taken at each location identified for surface activity measurements Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NO paint samples to be taken (Floor is linoleum – paint samples not possible)	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

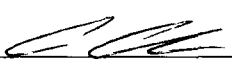
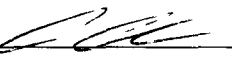
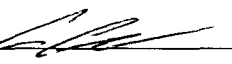
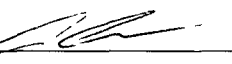
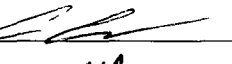
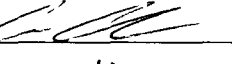
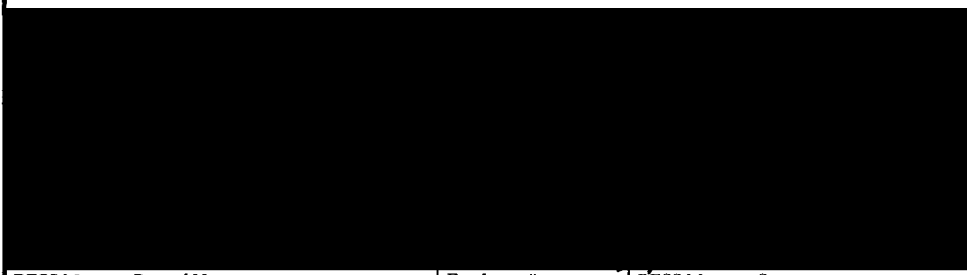
SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID. 2000-0002	Building (707) 778 WEST - CA
Survey Area: C	Survey Unit N/A
Survey Unit Description: POSTED CONTAMINATION AREA AT WEST END OF BUILDING 778 SURVEY AREA EXTENDS WEST FROM COLUMN 7W TO THE WEST END OF BUILDING IN ROOM 100 AREA IS FORMER RADIOLOGICAL LAUNDRY FACILITY	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 2000-0002	Building (707) 778 WEST - CA
Survey Area: C	Survey Unit N/A
Survey Unit Description: . WEST END OF BUILDING 778 (POSTED CA)	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<p>1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering</p> <p>2 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos</p> <p>3 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The highest "elevated reading" PAT measurement found in the 1m² scan area will be documented. Swipe measurements will be collected at the elevated reading location as well.</p> <p>4 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is not noted, fixed (PAT) measurements and swipes will be taken from the lower left hand corner of the 1m² scan area to maintain consistency in sample point locations.</p> <p>5 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02. Each recount shall be documented separately and the physical surface marked as specified in item 3 above.</p> <p>6 Due to potential impacts from beta-gamma emitters in some specified survey areas, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering. Survey forms shall be marked "N/A" where beta measurements are not collected.</p> <p>7 Where not already indicated, assure that the following are written on the survey area diagram/photographic map/survey map:</p> <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) <p>8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point:</p> <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 2000-0002		Building (707) 778 WEST - CA	
Survey Area: C		Survey Unit N/A	
Survey Type Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys			RDW
Total Activity Surveys			RDW
Exposure Rate Surveys		NA	NA
Removable Surveys			RDW
Media Samples		NA	NA
Volumetric Samples		NA	NA
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys			RDW
Total Activity Surveys			RDW
Exposure Rate Surveys		NA	NA
Removable Surveys			RDW
Media Samples		NA	NA
Volumetric Samples		NA	NA
Comments			
			5-8-00
			Date
			5-15-00
			Date
RESS Manager Printed Name		Employee #	RESS Manager Signature
			Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____

Time _____

RCT _____

Print name _____

Signature _____

Emp # _____

RCT _____

Print name _____

Signature _____

Emp # _____

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____

RS Supervision _____

Print Name _____

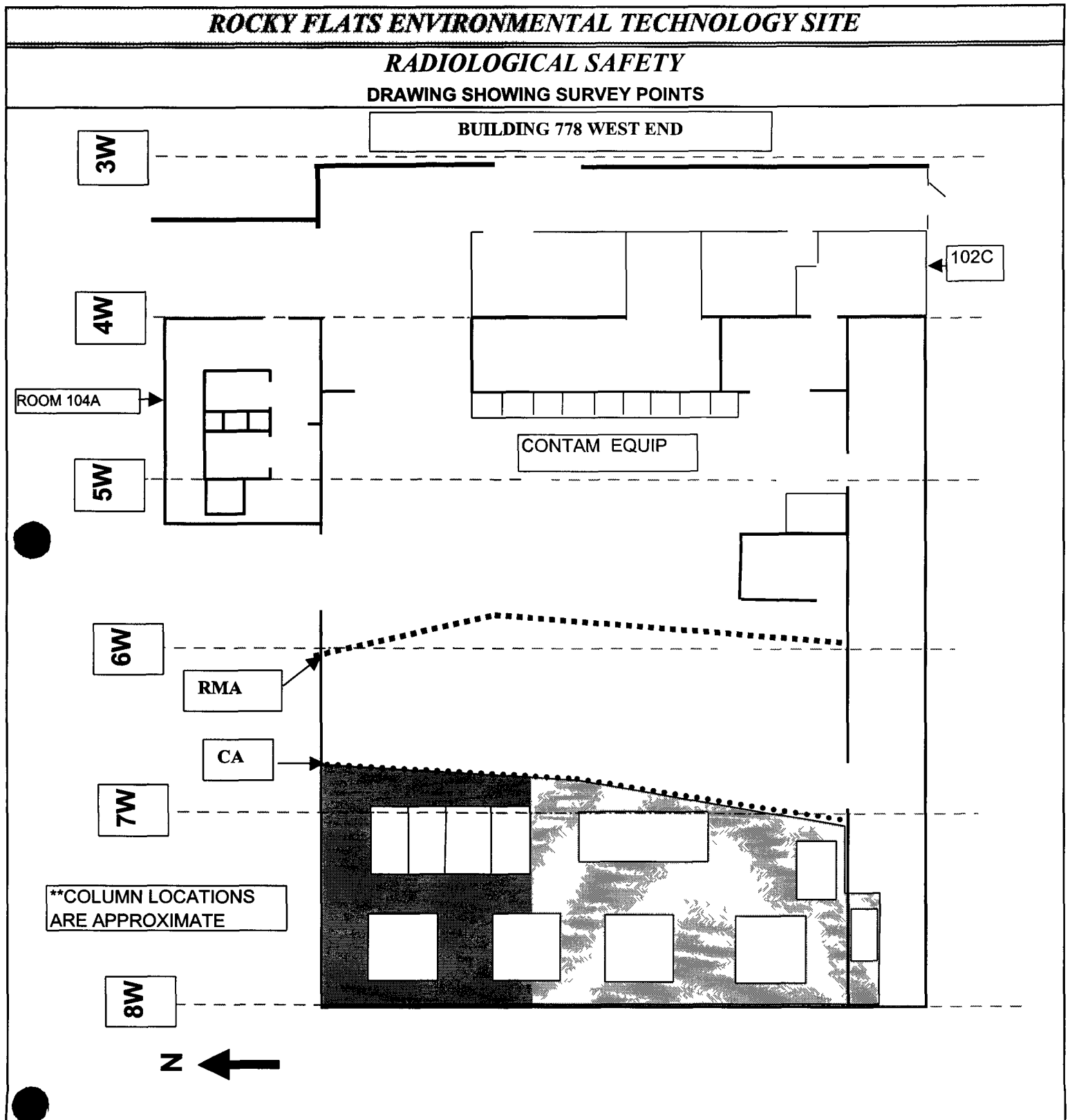
Signature _____

Emp # _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____

Time _____

RCT _____

Print name

Signature

Emp #

RCT _____

Print name

Signature

Emp #

PRL # _____

Comments _____

SURVEY RESULTS

Int #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____

RS Supervision _____

Print Name

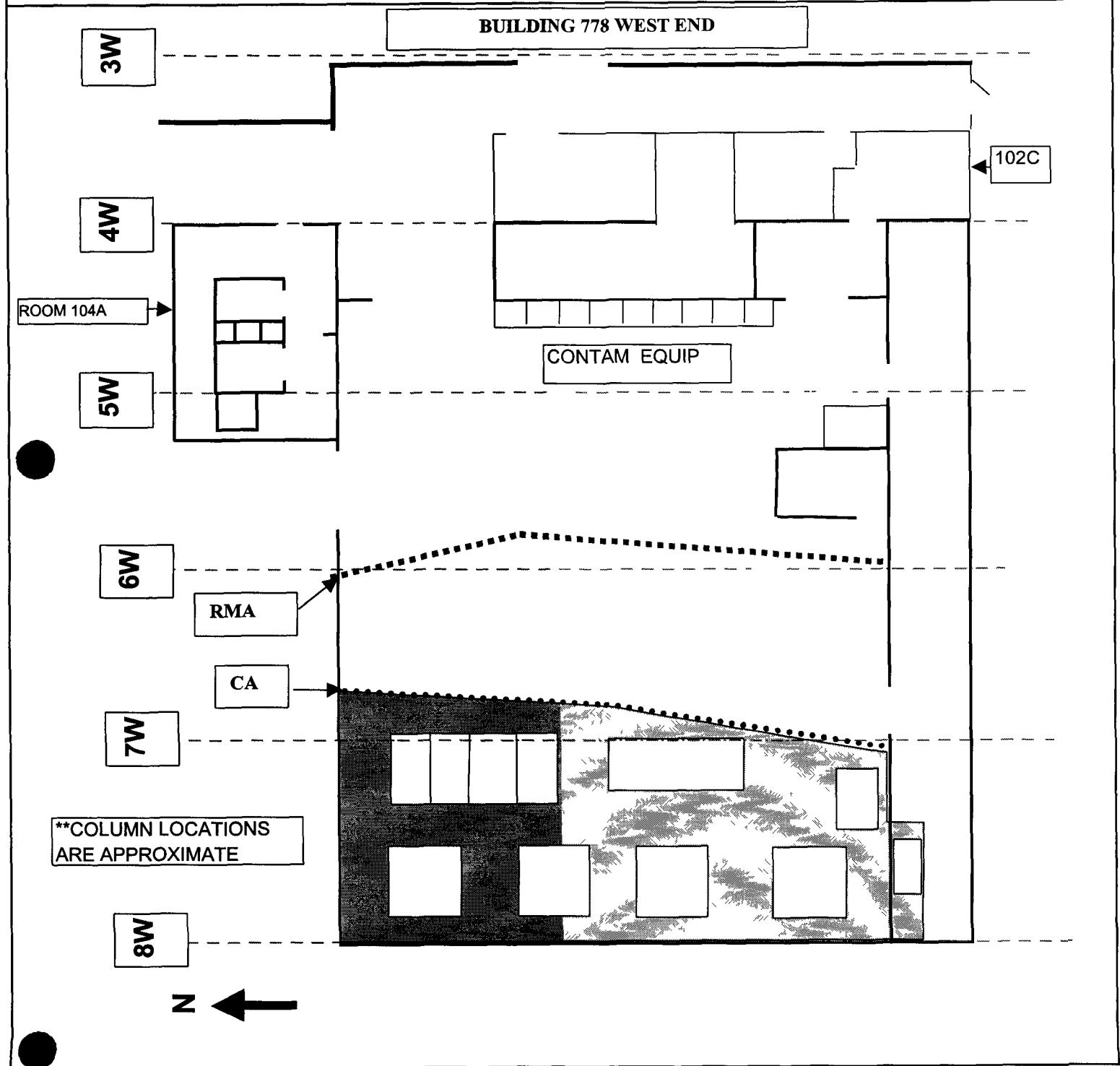
Signature

Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____ Time _____

 RCT _____ / _____
 Print name Signature Emp #

 RCT _____ / _____
 Print name Signature Emp #

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

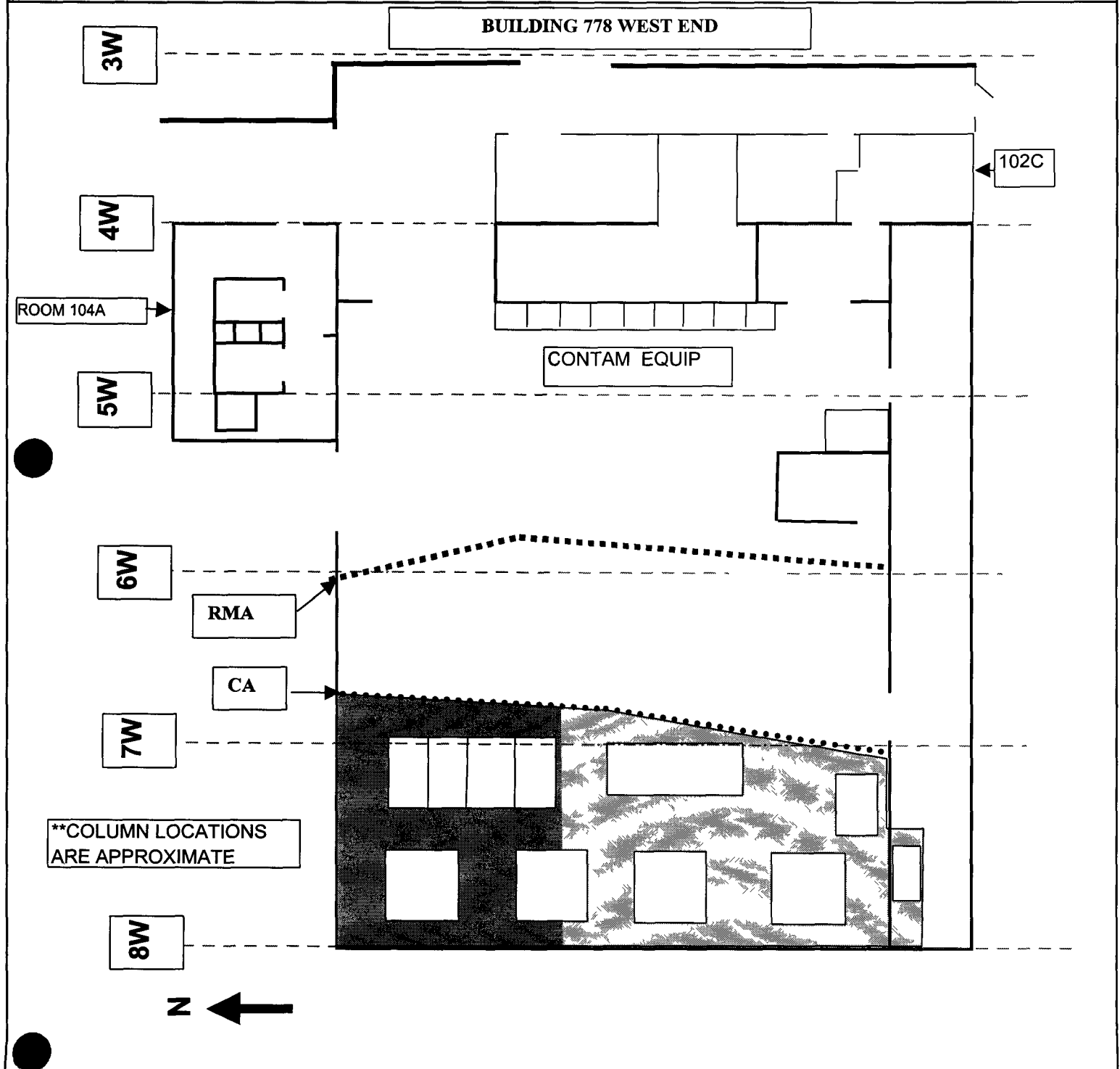
 Date Reviewed _____ RS Supervision _____
 Print Name Signature Emp #

958

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS



959

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type CONTAMINATION

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____ Time _____

RCT _____ / _____ / _____

Print name _____ Signature _____ Emp # _____

RCT _____ / _____ / _____

Print name _____ Signature _____ Emp # _____

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____ RS Supervision _____

Print Name _____ Signature _____ Emp # _____

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change #1

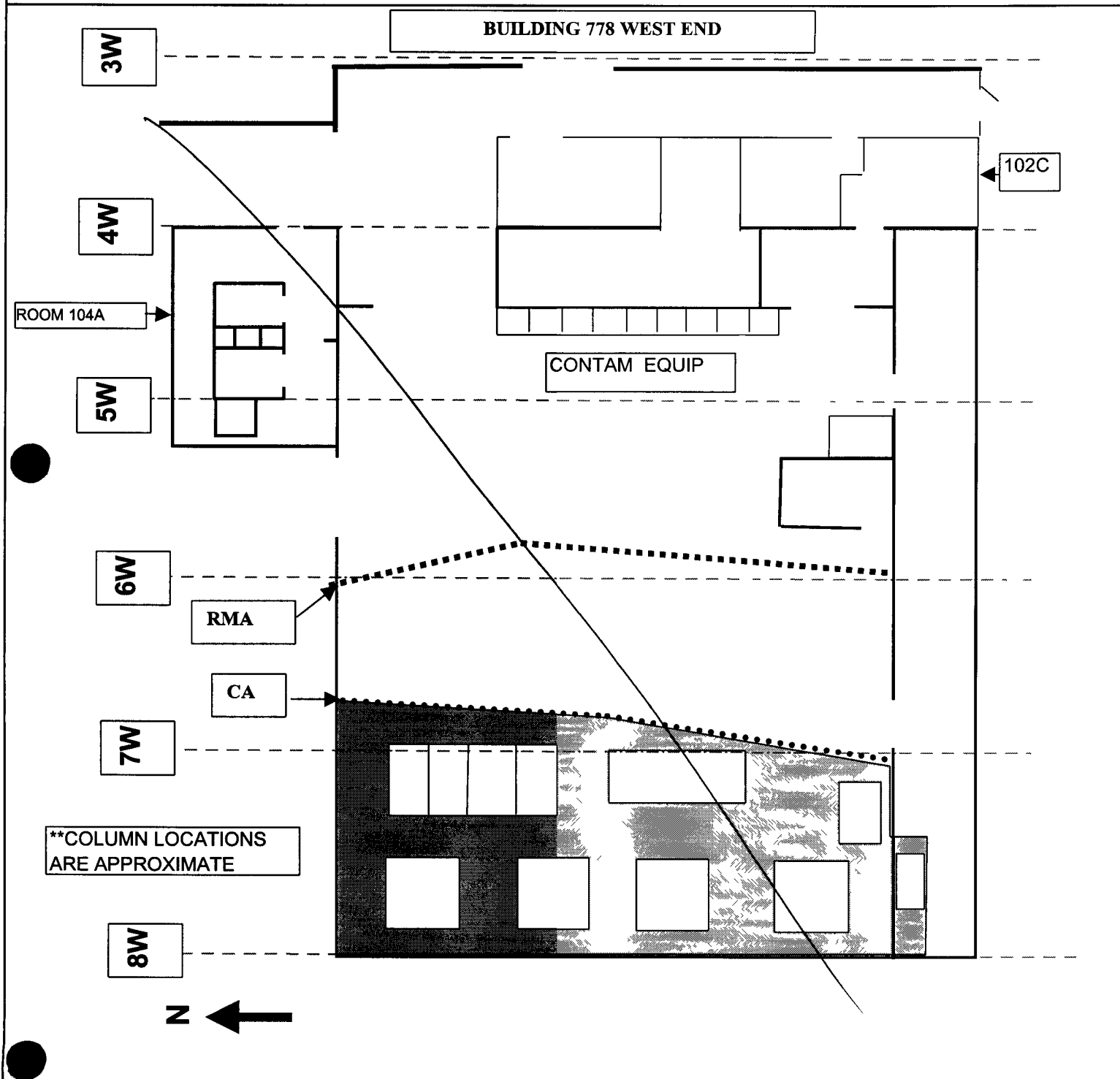
(Survey Area Pkg Page 17 of 17)

RS FORMS 07.02-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>1518</u>
Cal Due <u>8-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.0 cpm</u>	Bkg <u>0.6 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.86%</u>
MDA <u>8.2 dpm</u>	MDA <u>16.3 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NE Tech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>959</u>	Serial # <u> </u>	Serial # <u>3265</u>
Cal Due <u>7-19-00</u>	Cal Due <u> </u>	Cal Due <u>7-3-00</u>
Bkg <u>4.5 cpm</u>	Bkg <u> </u>	Bkg <u>3.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>21.01%</u>
MDA <u>16.3 dpm</u>	MDA <u>NA</u>	MDA <u>94 dpm</u>

Survey Type Contamination

Building 778
 Location West - CA Survey Area C
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 5-8-00 Time 4 Days

Comments Floor / Walls < 2 meters Unbiased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Wall	0	-8	-6	16	Wall	0	4	-6
2		0	14	-6	17	Floor	0	20	30
3		0	-4	-6	18	Floor	3	-48	36
4		0	-12	0	19	Wall	0	-28	6
5	Wall	0	24	0	20	Wall	0	-20	6
6	Floor	0	-44	26	21	Floor	0	-8	84
7		0	-32	18	22	Wall	0	36	6
8		6	12	84	23	Floor	3	24	24
9		0	0	54	24	Floor	0	4	86
10	Floor	6	20	6	25	Wall	3	-8	30
11	Wall	0	8	-12	26	Wall	3	-24	24
12		3	-12	0	27	Floor	3	-36	54
13	Wall	0	32	12	28		3	4	48
14	Floor	0	16	6	29	Floor	0	-16	12
15	Floor	0	-32	18	30	Wall			

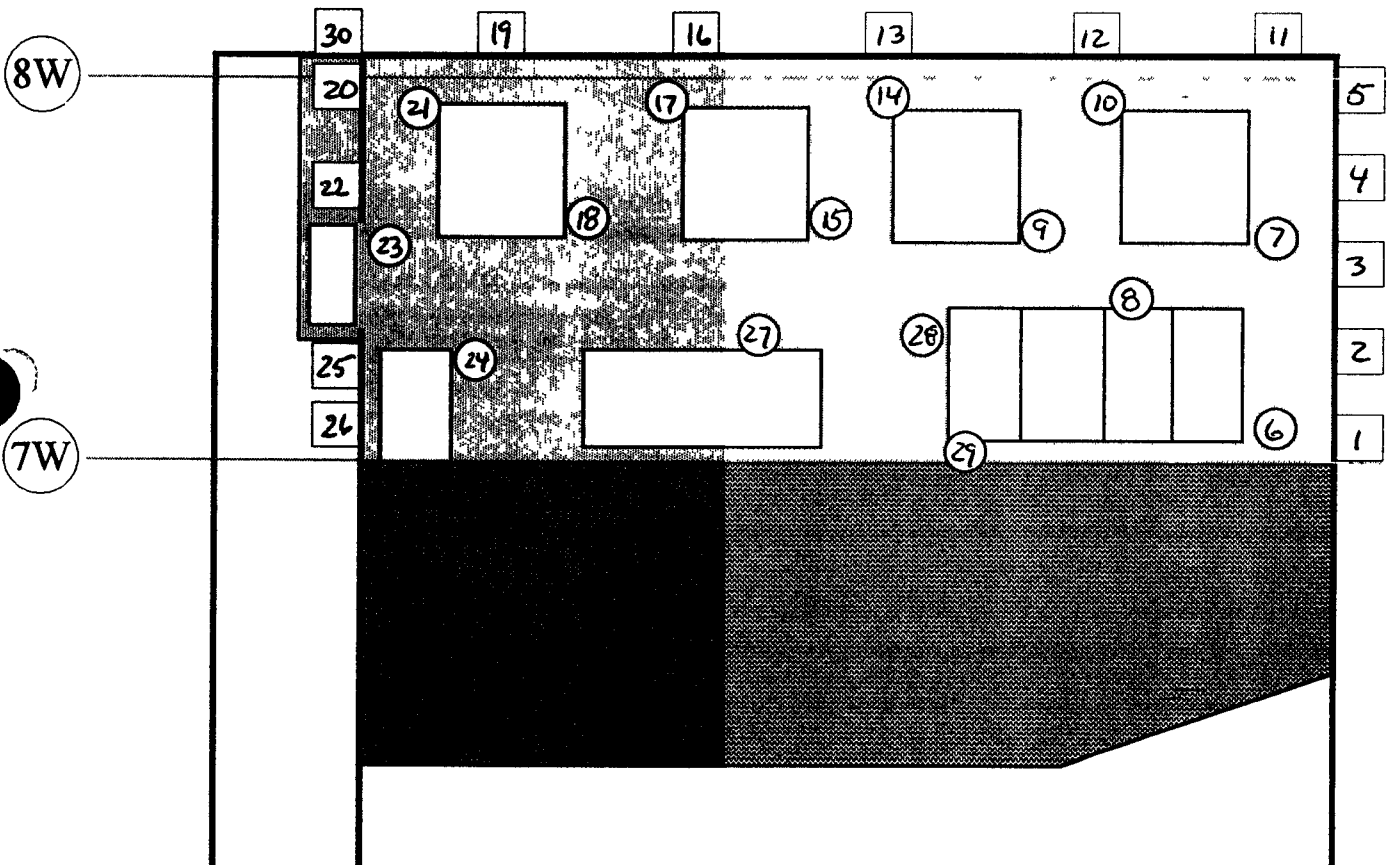
Date Reviewed: 5-8-00 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Building 778



 -R.M.A.

 -C.A.

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>1518</u>
Cal Due <u>8-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.6 cpm</u>	Bkg <u>0.6 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>21.86%</u>
MDA <u>8.2 dpm</u>	MDA <u>16.3 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u> <u>NA</u>	Mfg <u>NA</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>NA</u>
Serial # <u>959</u>	Serial # <u>NA</u>	Serial # <u>NA</u>
Cal Due <u>7-19-00</u>	Cal Due <u>NA</u>	Cal Due <u>NA</u>
Bkg <u>45 cpm</u>	Bkg <u>NA</u>	Bkg <u>NA</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>NA</u>
MDA <u>103.4 dpm</u>	MDA <u>NA</u>	MDA <u>NA</u>

Survey Type Contamination

Building 778
 Location West- CA Survey Area C
 Purpose Reconnaissance Level Characterization

RWP # 007671204Date 5-4-00Time Pm

Comments Floor / Walls < 2 meters Biased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	under washer	3	36	72	16	NA			
2	under deck plate	0	92	30	17				
3	Drain	0	4	78	18				
4	under washer	3	-36	12	19				
5	Drain	3	-36	132	20				
6	under washer	6	-12	36	21				
7	Lint trap	0	-36	28	22				
8	Lint trap	6	12	54	23				
9	under washer	0	-36	24	24				
10	under washer	3	-44	84	25				
11	END OF SURVEY			NA	26				
12					27				
13					28				
14					29				
15	NA				30				NA

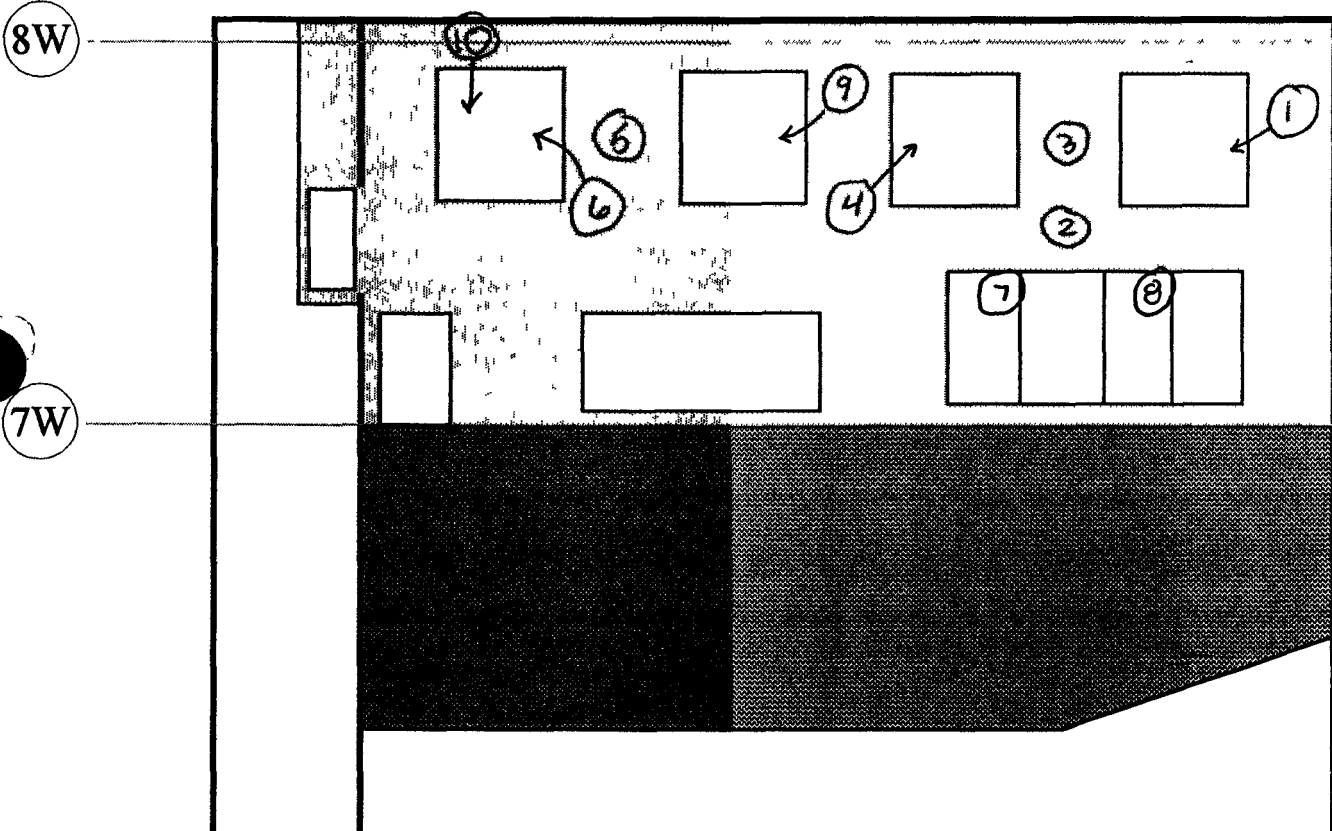
Date Reviewed 5-8-00 RS Supervision: 

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Building 778



 -R.M.A.

 -C.A.

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>1233</u>
Cal Due <u>8-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.0 cpm</u>	Bkg <u>0.6 cpm</u>	Bkg <u>3.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.63%</u>
MDA <u>8.2 dpm</u>	MDA <u>16.3 dpm</u>	MDA <u>94 Dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u> <u>NA</u>	Mfg <u>NA</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>NA</u>
Serial # <u>959</u>	Serial # <u>NA</u>	Serial # <u>NA</u>
Cal Due <u>7-19-00</u>	Cal Due <u>NA</u>	Cal Due <u>NA</u>
Bkg <u>45 cpm</u>	Bkg <u>NA</u>	Bkg <u>NA</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>NA</u>
MDA <u>103.4 dpm</u>	MDA <u>NA</u>	MDA <u>NA</u>

Survey Type Contamination

Building 778
 Location West-CA Survey Area C
 Purpose Reconnaissance Level Characterization

RWP # 007071204Date 5-4-00 Time pm

RCT SPCloud SPCloud
 Print name / Signature

RCT RL Lincoln RL Lincoln
 Print name / Signature

Comments Ceiling / Walls > 2 meters Biased survey points
1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Wall > 2m	0	-48	0	16	NA			
2		0	72	-6	17				
3		6	4	6	18				
4		3	0	-6	19				
5		0	-40	-12	20				
6	Wall > 2m	6	12	12	21				
7	Ceiling	0	72	-12	22				
8		0	-48	-6	23				
9		6	-32	0	24				
10	Ceiling	3	4	-12	25				
11	END OF SURVEY			NA	26				
12					27				
13					28				
14					29				
15	NA				30				NA

Date Reviewed 5-8-00

RS Supervision:

Allhouse
 Print Name Signature

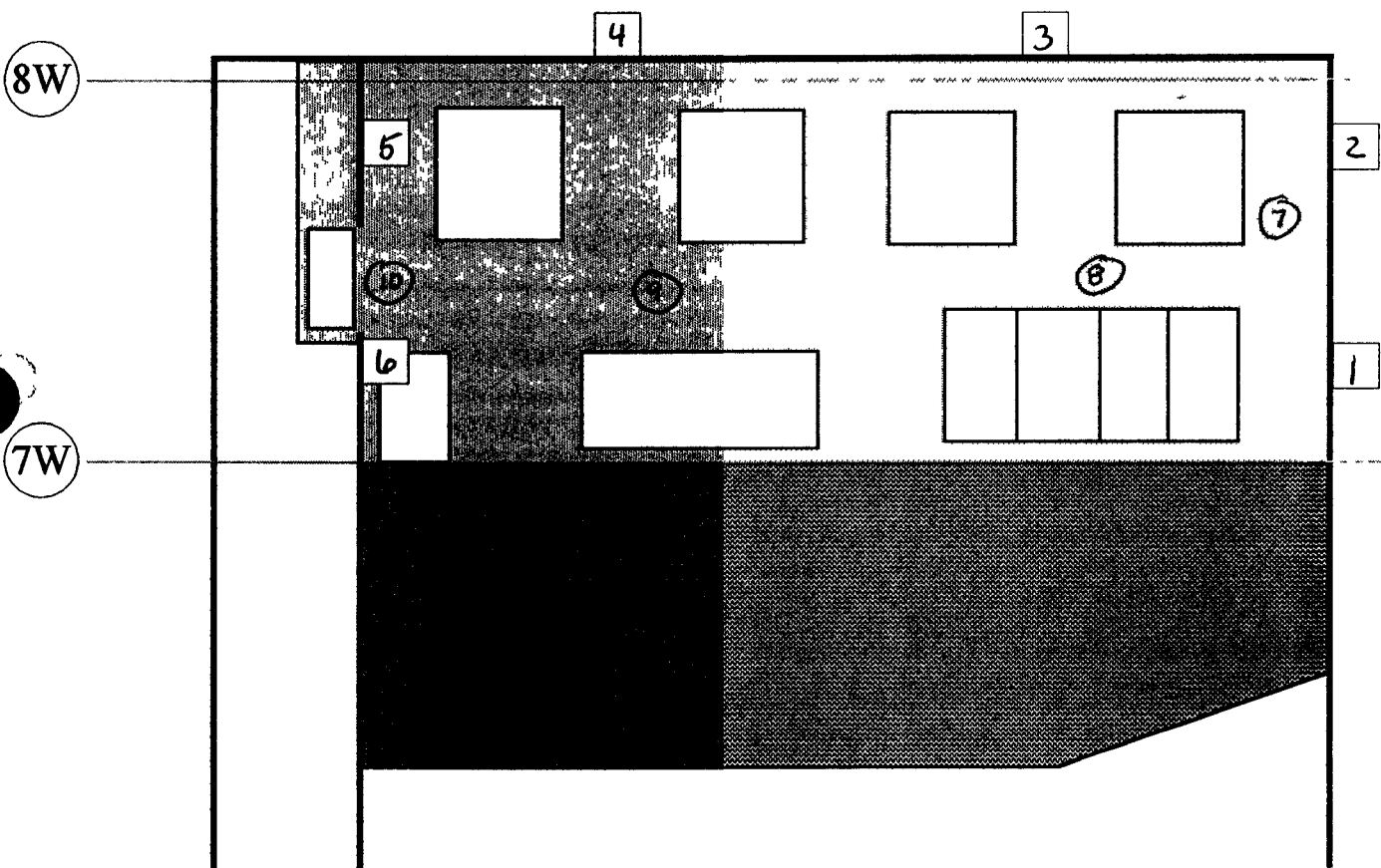
Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Building 778



 -R.M.A.

 -C.A.

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA****Survey Type Contamination**

Building 778
 Location West - CA Survey Area C
 Purpose Reconnaissance Level Characterization

RWP # 007071204Date 5-4-00 Time 12 Days

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>1518</u>
Cal Due <u>8-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>6-29-00</u>
Bkg <u>0.0 cpm</u>	Bkg <u>0.6 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>2186%</u>
MDA <u>8.2 dpm</u>	MDA <u>16.3</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NA</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>NA</u>
Serial # <u>959</u>	Serial # <u>NA</u>	Serial # <u>NA</u>
Cal Due <u>7-19-00</u>	Cal Due <u>NA</u>	Cal Due <u>NA</u>
Bkg <u>45 cpm</u>	Bkg <u>NA</u>	Bkg <u>NA</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>NA</u>
MDA <u>103.4</u>	MDA <u>NA</u>	MDA <u>NA</u>

Comments Equipment Biased survey points
1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Washer	0	40	18	16	Inside Dryer	0	16	54
2		6	0	48	17	1	3	-8	24
3		3	20	84	18	Inside Dryer	0	32	30
4		0	-20	30	19	Spk Dryer	0	28	24
5		0	24	66	20	Dryer	3	12	-12
6		9	16	42	21	Duct	0	36	18
7	WASHER	3	32	6	22	Piping	0	-4	-6
8	Dryer	0	-16	48	23	Duct	0	-4	12
9		0	28	66	24	Light	0	-20	-6
10		6	-8	48	25	Duct	0	-24	-6
11	Dryer	3	-4	474	26	Top Dryer	0	-12	-12
12	Table	3	8	30	27	Vent pipe	0	-12	24
13	Dryer	3	12	24	28	Steam pipe	6	4	30
14	Inside Dryer	0	-36	66	29	Piping	0	40	6
15	Dryer	3	4	52	30	Piping	0	40	6

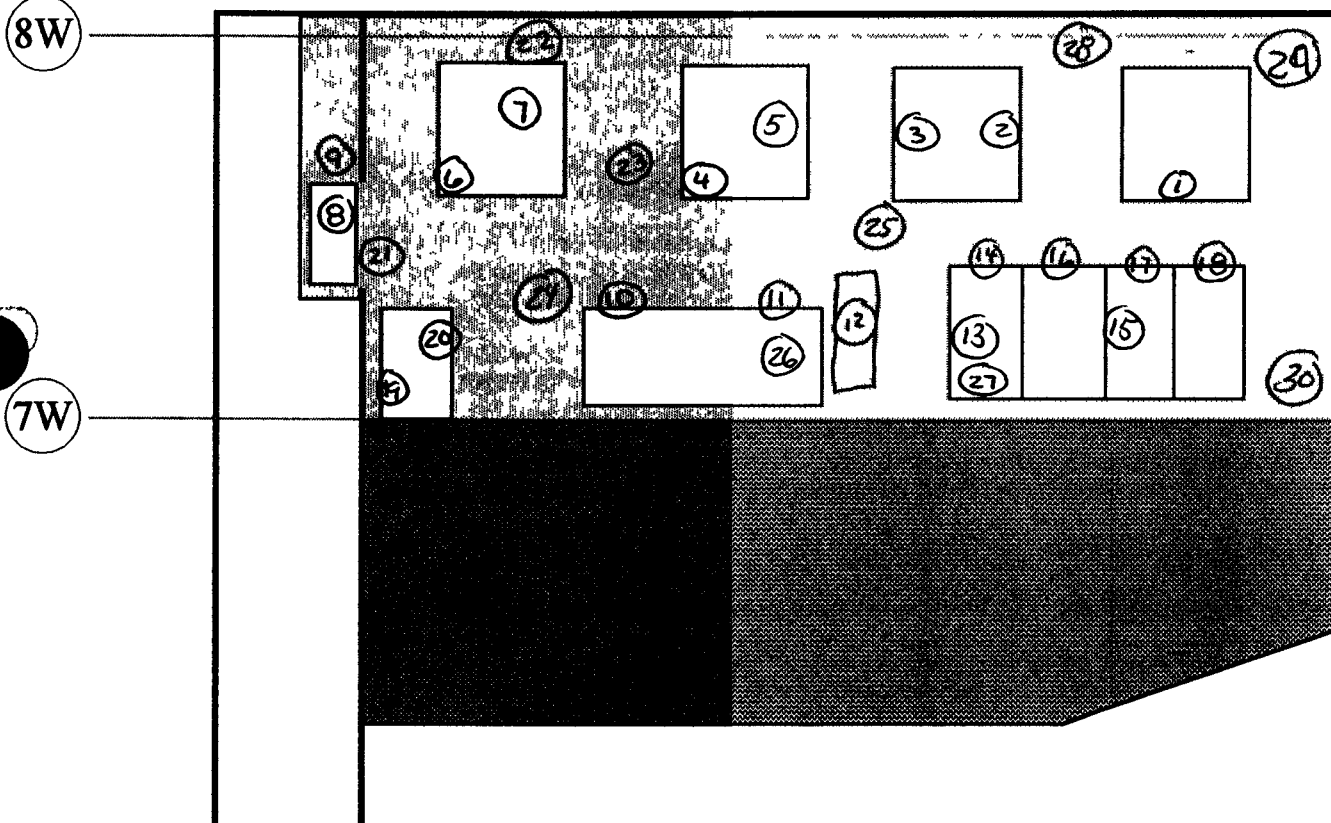
Date Reviewed: 5-8-00 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Building 778



 -R.M.A.

 -C.A.

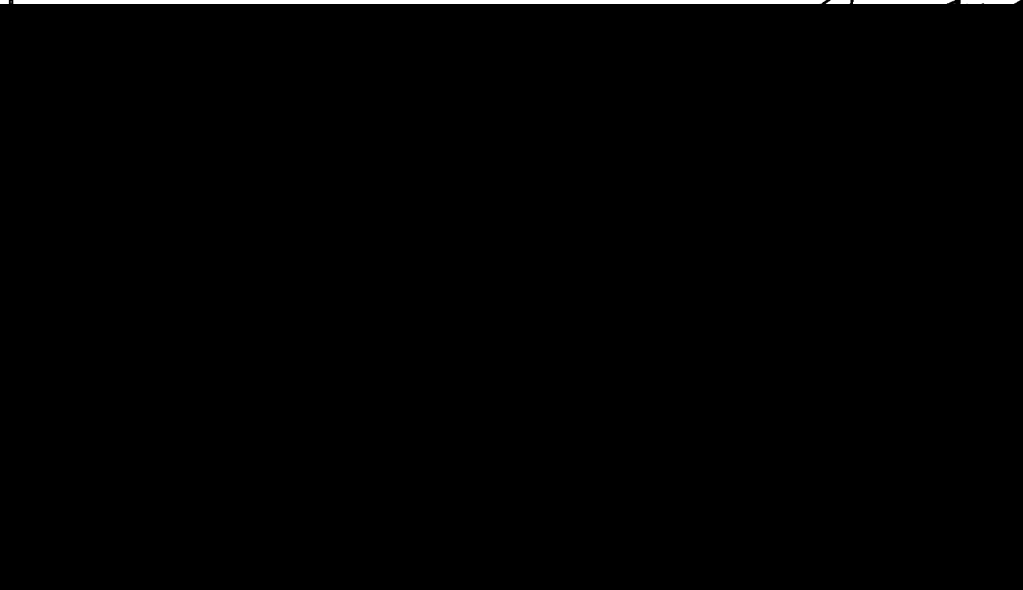
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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 2000-0002		Building 778 (EXT /ROOF)		Type 2	
Survey Area. D		Survey Unit N/A		Area (m ²) N/A	
Survey Unit Description External surfaces/roof of building 778					
Survey Type.			Classification		
RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	10	0	0	0	40
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description:					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type.		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

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SURVEY PACKAGE COVER SHEET

Package ID: 2000-0002	Building 778 (EXTERIOR/ROOF)
Survey Area: D	Survey Unit N/A
Survey Unit Description: External surfaces/roof of building 778	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input checked="" type="checkbox"/> Type 3 <input type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation:	
	3/7/00
	Date
	N/A
	Date
	3/9/00
	Date
	5-4-00
	Date
	N/A
	Date
	5/4/00
	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID. 2000-0002		Building 778 (EXTERIOR/ROOF)
Survey Area: D		Survey Unit N/A
Survey Unit Description: External surfaces/roof of building 778		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	ROOF/EXTERIOR WALLS 30 uniformly distributed survey points as follows <ul style="list-style-type: none"> - 8 survey points distributed uniformly across each of the North and South exterior walls (16 points total for N/S walls) - 1 point each on East and West walls (2 points total for E/W walls) - 12 survey points on roof where locations can be safely accessed (6 per North and 6 per South half) 10 biased survey points on roofs and wall at the following types of locations <ul style="list-style-type: none"> - Exits of roof drains/downspouts - Roof exhaust vents/duct work and capped roof openings - Other areas of potential concern based on RCT judgement 	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 2000-0002		Building 778 (EXTERIOR/ROOF)
Survey Area: D		Survey Unit N/A
Survey Unit Description: External surfaces/roof of building 778		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	ROOF/EXTERIOR WALLS 40 1 m ² surface scans shall be taken at each location identified for surface activity measurements on walls and roof. Locations found to be above the DCGL will be noted.	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	None	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 2000-0002	Building 778 (EXTERIOR/ROOF)
Survey Area: D	Survey Unit N/A
Survey Unit Description. External surfaces/roof of building 778	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none">- Direct alpha contamination- Removable alpha contamination- Removable beta contamination- 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 2000-0002	Building 778 (EXTERIOR/ROOF)
Survey Area: D	Survey Unit N/A
Survey Unit Description: : External surfaces/roof of building 778	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<p>1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering</p> <p>2 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos</p> <p>3 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The highest "elevated reading" PAT measurement found in the 1m² scan area will be documented. Swipe measurements will be collected at the elevated reading location as well.</p> <p>4 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is not noted, fixed (PAT) measurements and swipes will be taken from the lower left hand corner of the 1m² scan area to maintain consistency in sample point locations.</p> <p>5 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02. Each recount shall be documented separately and the physical surface marked as specified in item 3 above.</p> <p>6 Due to potential impacts from beta-gamma emitters in some specified survey areas, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering. Survey forms shall be marked "N/A" where beta measurements are not collected.</p> <p>7 Where not already indicated assure that the following are written on the survey area diagram/photographic map/survey map</p> <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) <p>8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point</p> <p>(F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)</p>	

[illegible]

Package ID. 2000-0002	Building 778 (EXTERIOR/ROOF)	
Survey Area D	Survey Unit N/A	
Survey Type. Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>		
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	1	db
Total Activity Surveys	1	db
Exposure Rate Surveys	NA	NA
Removable Surveys	1	db
Media Samples	NA	NA
Volumetric Samples	NA	NA
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	1	db
Total Activity Surveys	1	db
Exposure Rate Surveys	NA	NA
Removable Surveys	1	db
Media Samples	NA	NA
Volumetric Samples	NA	NA
Comments* 		
		5-2-00 Date
		5-4-00 Date
		5/4/00 Date

978

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____ Time _____

RCT _____ / _____ / _____
 Print name Signature Emp #

RCT _____ / _____ / _____
 Print name Signature Emp #

PRL # _____

Comments _____

SURVEY RESULTS

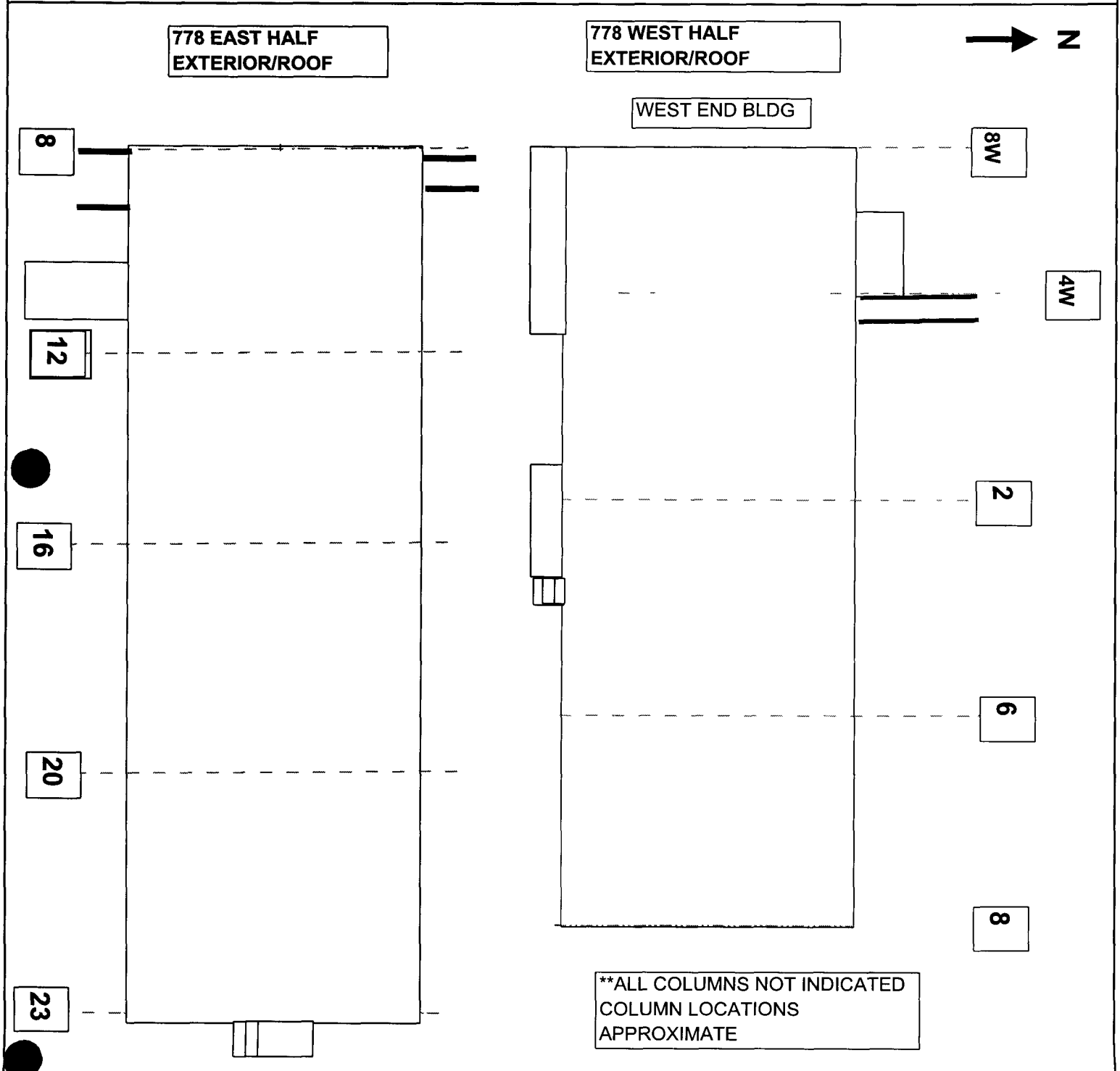
Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____ RS Supervision _____
 Print Name Signature Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

|Survey Type|CONTAMINATION|

Building

Location _____

Purpose	Reconnaissance Level Characterization
Identify and locate the target	Identify the target's location, size, and shape. Determine the target's orientation and movement.
Determine the target's capabilities	Determine the target's weapons, armor, and other capabilities. Determine the target's communication and control systems.
Assess the target's vulnerability	Assess the target's weaknesses and vulnerabilities. Determine the target's critical systems and components.
Develop a plan of attack	Develop a plan of attack based on the target's capabilities and vulnerabilities. Determine the best time and place to attack.
Execute the attack	Execute the attack using the appropriate weapons and tactics. Monitor the target's status and adjust the attack as needed.
Assess the results of the attack	Assess the results of the attack. Determine if the target has been destroyed or disabled. Determine if the attack has achieved its purpose.

RWP #

Date	Time
------	------

RCT _____ / _____ / _____
Print name Signature Emp #

RCT _____ / _____ / _____
 Print name Signature Emp #

PRL #

Comments

SURVEY RESULTS

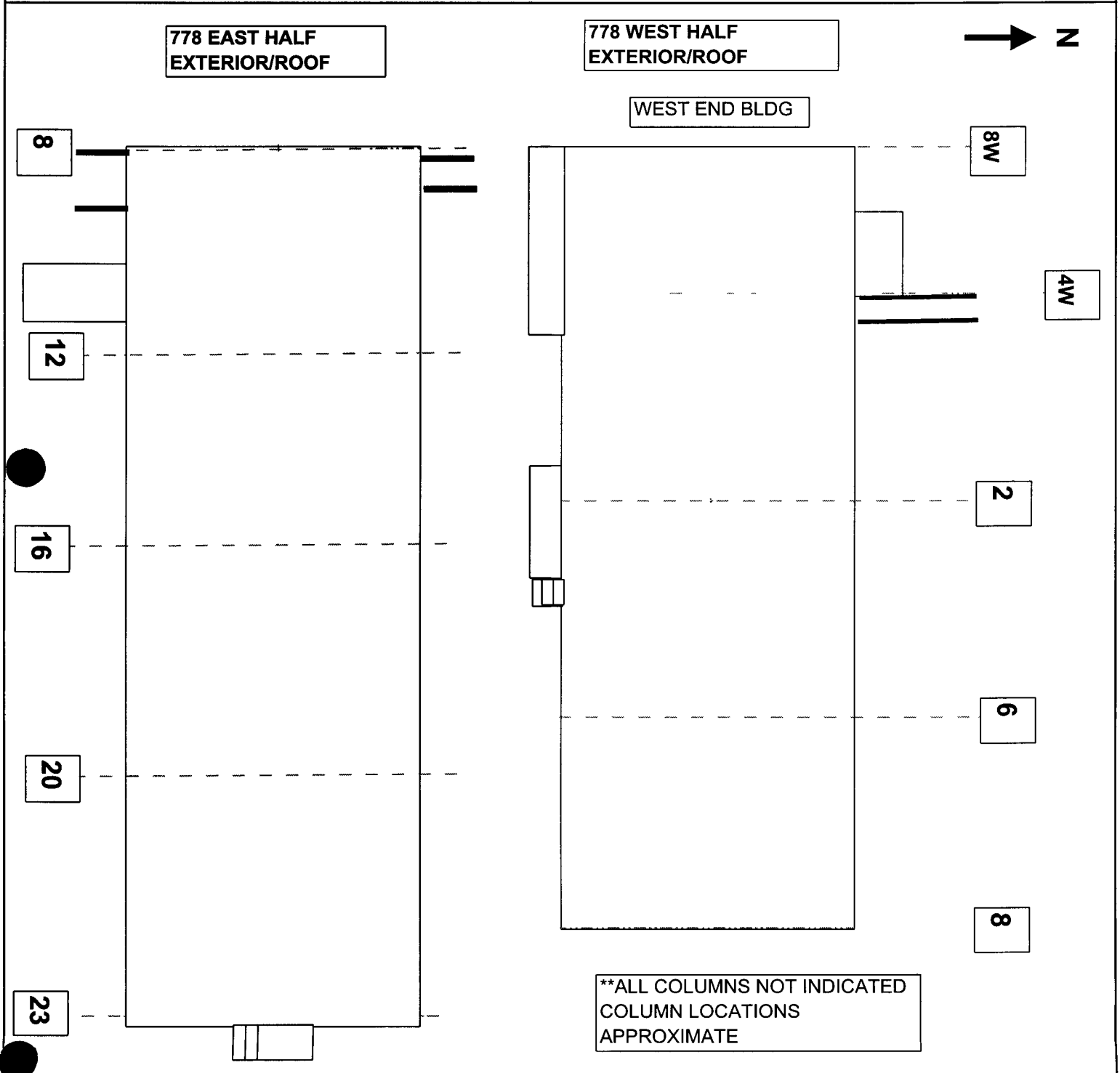
Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____ **RS Supervision** _____
Print Name Signature Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 846	Serial # 1054	Serial # 1518
Cal Due 8-15-00	Cal Due 8-23-00	Cal Due 6-29-00
Bkg 0.2 cpm	Bkg 0.3 cpm	Bkg 2.0 cpm
Efficiency 33%	Efficiency 33%	Efficiency 12186
MDA 12.9 dpm	MDA 13.9 dpm	MDA 94 dpm
Mfg Eberline	Mfg Eberline	Mfg NE Tech
Model BC-4	Model BC-4	Model Electra
Serial # 959	Serial # 833	Serial # 1233
Cal Due 7-19-00	Cal Due 7-14-00	Cal Due 5-11-00
Bkg 40 cpm	Bkg 36 cpm	Bkg 0.0 cpm
Efficiency 25%	Efficiency 25%	Efficiency 1063
MDA 98.1 dpm	MDA 93.7 dpm	MDA 94 dpm

Survey Type Contamination

Building 778
 Location Exterior Roof Survey Area Δ
 Purpose Reconnaissance Level Characterization

RWP # 007071204

Date 4-27-51-00 Time Days

Comments Roof/Exterior Walls < 2 meters Unbiased survey points 142
 1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Wall < 2m	0	12	24	16	Wall < 2m	6	-4	132
2	" "	0	32	42	17	" "	3	-32	78
3	" "	0	36	60	18	" "	3	40	60
4	" "	0	4	60	19	Roof	3	12	66
5	" "	0	28	52	20	"	0	20	72
6	" "	0	-16	102	21	"	3	32	102
7	" "	0	12	42	22	"	3	46	156
8	" "	0	40	42	23	"	3	-12	156
9	" "	0	-4	24	24	"	0	16	150
10	" "	3	-28	60	25	"	0	-4	24
11	" "	3	16	30	26	"	0	20	156
12	" "	0	-28	24	27	"	0	8	222
13	" "	6	-12	84	28	"	0	-12	144
14	" "	0	28	54	29	"	0	-8	114
15	" "	0	48	102	30	"	6	16	48

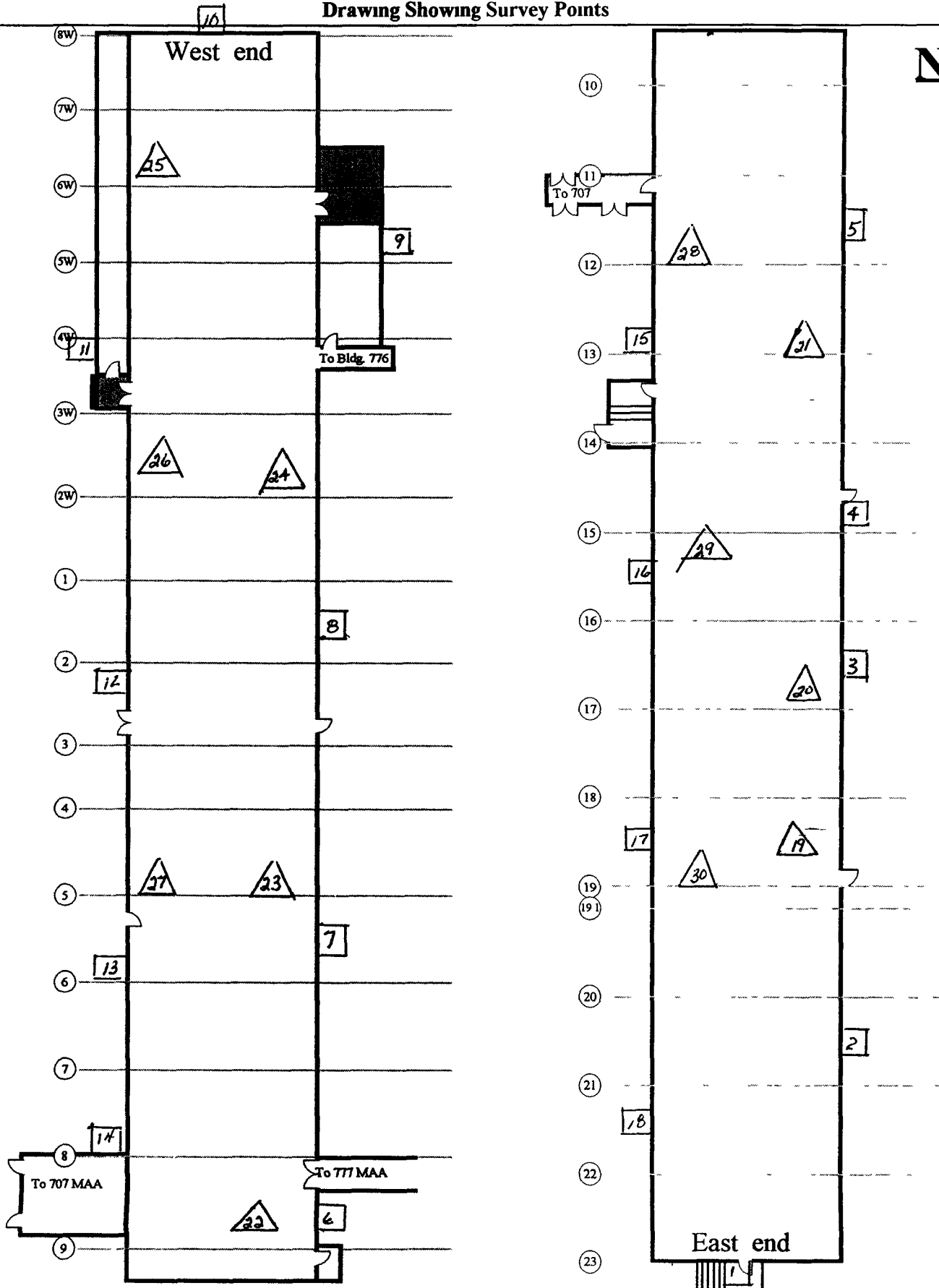
Date Reviewed: 5-2-00 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

2.42

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>1233</u>
Cal Due <u>8-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>8.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>12063</u>
MDA <u>11.5 dpm</u>	MDA <u>12.9 dpm</u>	MDA <u>94 dpm</u>

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NE Tech</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>Electra</u>
Serial # <u>959</u>	Serial # <u>833</u>	Serial # <u>1233</u>
Cal Due <u>7-19-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>35 cpm</u>	Bkg <u>43 cpm</u>	Bkg <u>8.0 cpm</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>12063</u>
MDA <u>92.5 dpm</u>	MDA <u>101.3 dpm</u>	MDA <u>94 dpm</u>

Survey Type Contamination

Building 778
 Location Exterior Survey Area D
 Purpose Reconnaissance Level Characterization

RWP # 007071204Date 5-15-00 Time DaysComments Roof / Exterior Walls Biased survey points1 m² scans, 1 minute pats and swipes See map for locations**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Down Spout	0	8	168	16				
2	Drain	6	-32	48	17				
3	Drain	0	32	60	18				
4	Downspout	0	60	126	19				
5	Downspout	0	20	42	20				
6	Grate Over Drain	0	-24	468	21				
7	Downspout	0	-12	264	22				
8	Downspout	0	20	120	23				
9	Downspout	6	-12	294	24				
10	Roof Above Door	0	16	96	25				
11					26				
12					27				
13					28				
14					29				
15					30				

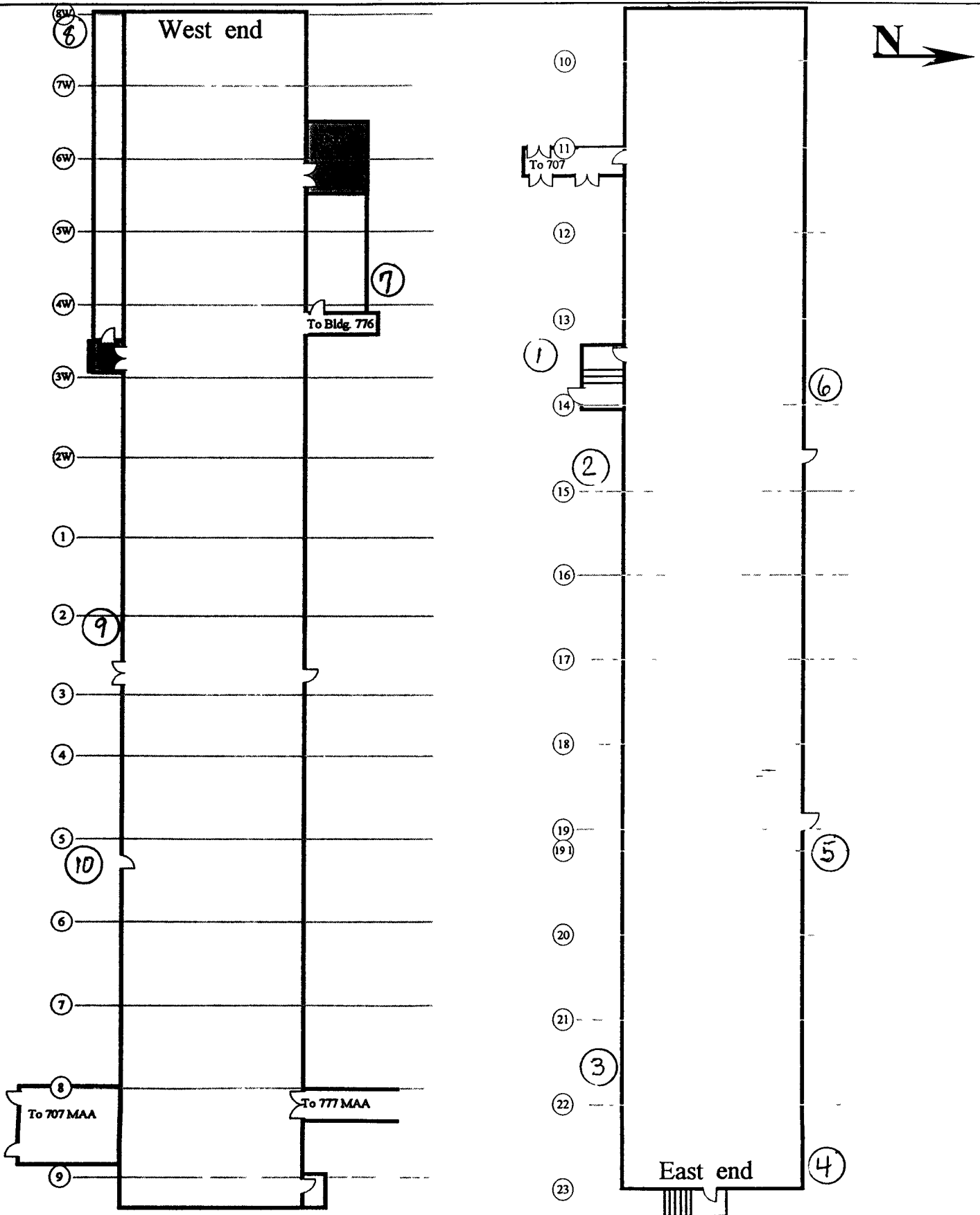
Date Reviewed: 5-2-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

2 of 2

Drawing Showing Survey Points

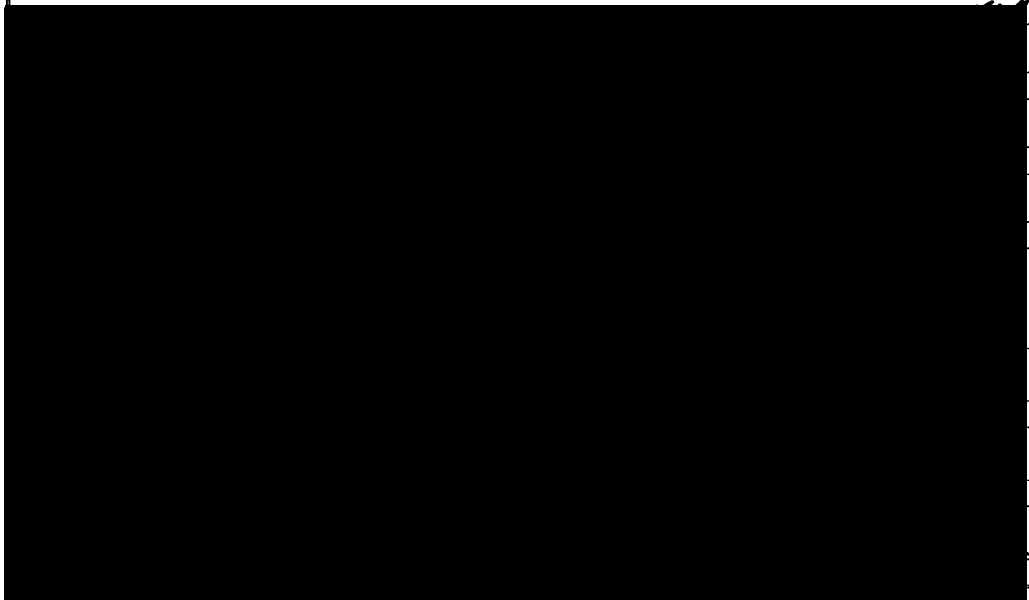


[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 2000-0002		Building . (707) 732 PIT INTERIOR		Type 2	
Survey Area: E		Survey Unit: N/A		Area (m²) <15	
Survey Unit Description: INTERIOR OF BUILDING 732 (732 PIT) THIS SURVEY AREA IS PERMANENTLY POSTED AS A FIXED CONTAMINATION AREA					
Survey Type: RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	10	30	2	0	30
Building		Type:		Survey Area	
Survey Unit:			Area (m²)		
Survey Unit Description					
Survey Type: RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description:					
Survey Type: RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description.					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 2000-0002	Building (707) 732 PIT INTERIOR	
Survey Area: E	Survey Unit N/A	
Survey Unit Description: INTERIOR OF BUILDING 732 (732 PIT) THIS SURVEY AREA IS PERMANENTLY POSTED AS A FIXED CONTAMINATION AREA		
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input checked="" type="checkbox"/> Type 3 <input type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____		
Justification for Classification: N/A		
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads		
Special Safety Precautions: Access to overhead, outdoor, or elevated areas may require additional controls or approvals from security. Assure that appropriate notifications have been made		
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>		
Labeling Requirements: NONE		
Survey Package Implementation:		
		3/2/00
		Date
		N/A
		Date
		3/2/00
		Date
		5-3-00
		Date
		N/A
		Date
		5/1/00
		Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID 2000-0002		Building (707) 732 PIT INTERIOR
Survey Area E		Survey Unit N/A
Survey Unit Description INTERIOR OF BUILDING 732 (732 PIT) THIS SURVEY AREA IS PERMANENTLY POSTED AS A FIXED CONTAMINATION AREA		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>30 uniformly distributed survey points located throughout inside of building (distributed between walls and floors)</p> <p>NO <u>biased</u> survey points on floors/walls<2 meters **</p> <p>(**Due to extremely small survey area size, proposed locations for biased surveys will overlap with uniformly distributed survey locations)</p> <p>CEILINGS/WALLS > 2 meters</p> <p>10 <u>biased</u> surveys on ceiling and walls>2 meters with focus on following areas</p> <ul style="list-style-type: none"> - Walls behind process/liquid lines - Stained or discolored areas - Areas around pipe or other penetrations <p>EQUIPMENT</p> <p>30 <u>biased</u> survey points on equipment with focus on</p> <ul style="list-style-type: none"> - Tank(s) - Piping/pumps associated with tank(s) - Ventilation exhaust duct(s) - Equipment having known spills or stains - On overhead piping (where locations are accessible) 	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 2000-0002		Building (707) 732 PIT INTERIOR
Survey Area: E		Survey Unit N/A
Survey Unit Description: INTERIOR OF BUILDING 732 (732 PIT) THIS SURVEY AREA IS PERMANENTLY POSTED AS A FIXED CONTAMINATION AREA		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 30 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	2 paint samples taken on floors beneath tanks/equipment	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)


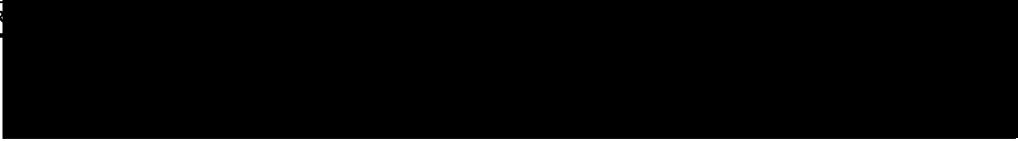
Package ID: 2000-0002	Building (707) 732 PIT INTERIOR
Survey Area: E	Survey Unit N/A
Survey Unit Description INTERIOR OF BUILDING 732 (732 PIT) THIS SURVEY AREA IS PERMANENTLY POSTED AS A FIXED CONTAMINATION AREA	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3. Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media "</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i>, <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media sampler – sample weight of media samples shall be determined prior to analysis disposition the sample in accordance with approved procedures • Media sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID. 2000-0002	Building (707) 732 PIT (INTERIOR)
Survey Area: E	Survey Unit N/A
Survey Unit Description: : INTERIOR OF BUILDING 732 (732 PIT) THIS SURVEY AREA IS PERMANENTLY POSTED AS A FIXED CONTAMINATION AREA	
Survey/Sampling Instructions	
<p>SUPPLEMENTAL INSTRUCTIONS</p> <p>1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering</p> <p>2 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos</p> <p>3 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The highest "elevated reading" PAT measurement found in the 1m² scan area will be documented. Swipe measurements will be collected at the elevated reading location as well.</p> <p>4 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is not noted, fixed (PAT) measurements and swipes will be taken from the lower left hand corner of the 1m² scan area to maintain consistency in sample point locations.</p> <p>5 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02. Each recount shall be documented separately and the physical surface marked as specified in item 3 above.</p> <p>6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering. Survey forms shall be marked "N/A" where beta measurements are not collected.</p> <p>7 Where not already indicated assure that the following are written on the survey area diagram/photographic map/survey map</p> <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) <p>8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point</p> <p>(F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)</p>	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 2000-0002		Building (707) 732 PIT INTERIOR	
Survey Area. E		Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys			
Total Activity Surveys			
Exposure Rate Surveys			
Removable Surveys			
Media Samples			
Volumetric Samples			
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys			
Total Activity Surveys			
Exposure Rate Surveys			
Removable Surveys			
Media Samples			
Volumetric Samples			
Comments 732 pit posted ARA- Not Surveyed IAW RSP 16 01 			
		5 3 00	
		Date	
		8-3-00	
		Date	
		5/15/00	
		Date	

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____ Time _____

RCT _____

Print name _____ Signature _____ Emp # _____

RCT _____

Print name _____ Signature _____ Emp # _____

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____

RS Supervision _____

Print Name _____

Signature _____

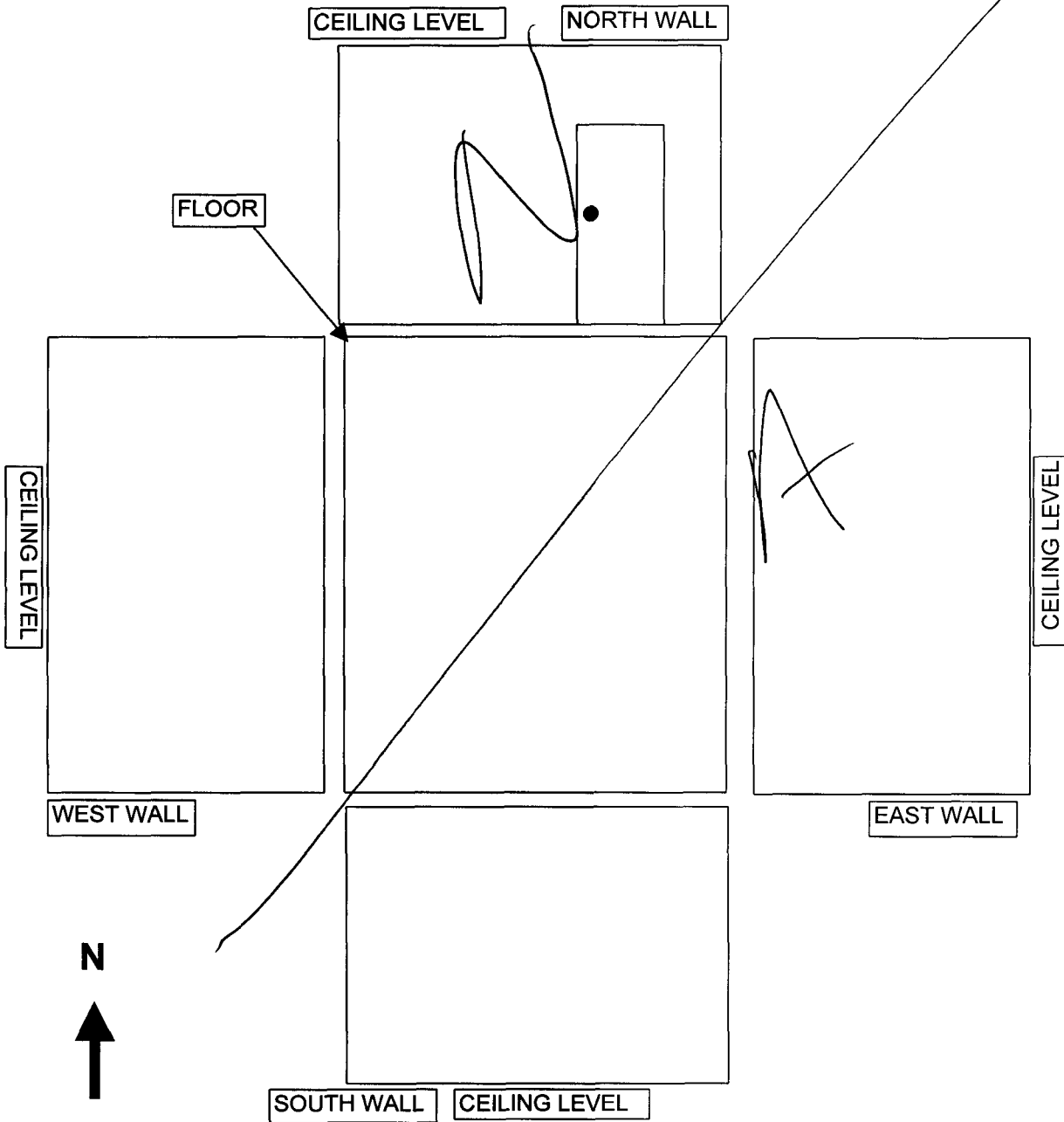
Emp # _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

**BUILDING 732 (732 "PIT")
INTERIOR**



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type CONTAMINATION

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____ Time _____

RCT _____

Print name _____ Signature _____ Emp # _____

RCT _____

Print name _____ Signature _____ Emp # _____

PRL # _____**Comments** _____**SURVEY RESULTS**

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____**RS Supervision** _____

Print Name _____

Signature _____

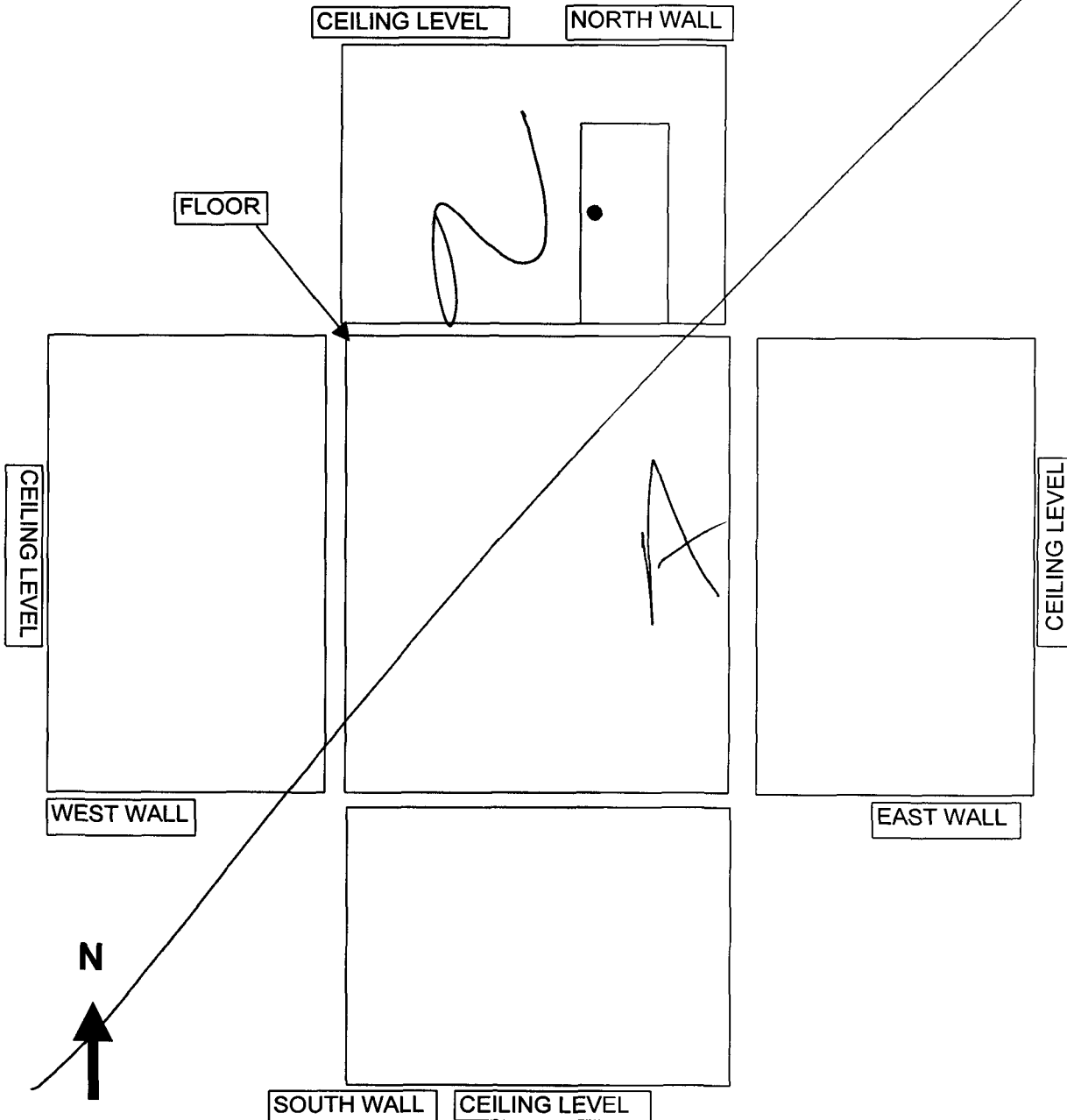
Emp # _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

**BUILDING 732 (732 "PIT")
INTERIOR**



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type CONTAMINATION

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____ Time _____

RCT _____

Print name _____ Signature _____ Emp # _____

RCT _____

Print name _____ Signature _____ Emp # _____

PRL # _____

Comments. _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____

RS Supervision _____

Print Name _____

Signature _____

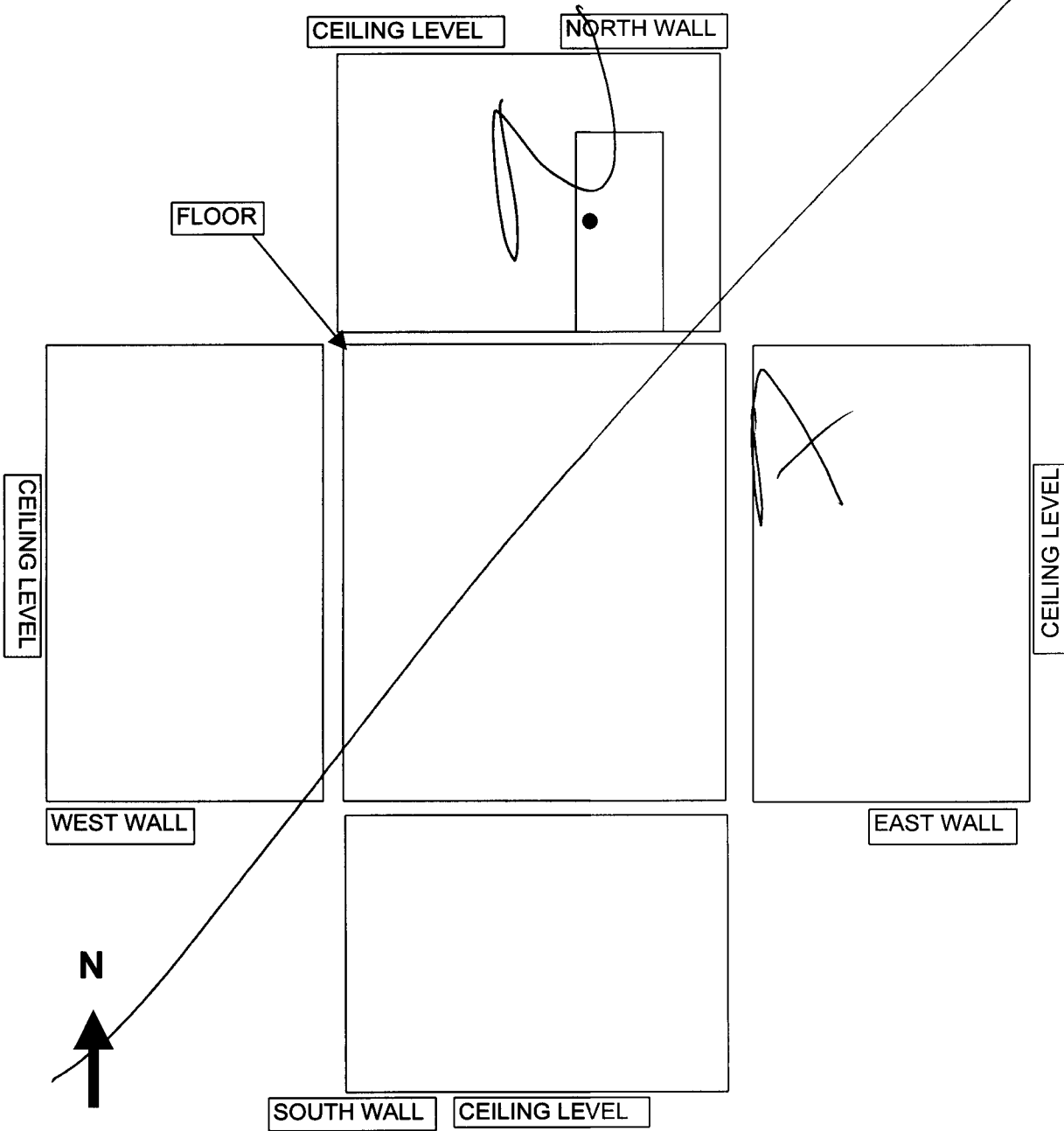
Emp # _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

**BUILDING 732 (732 "PIT")
INTERIOR**



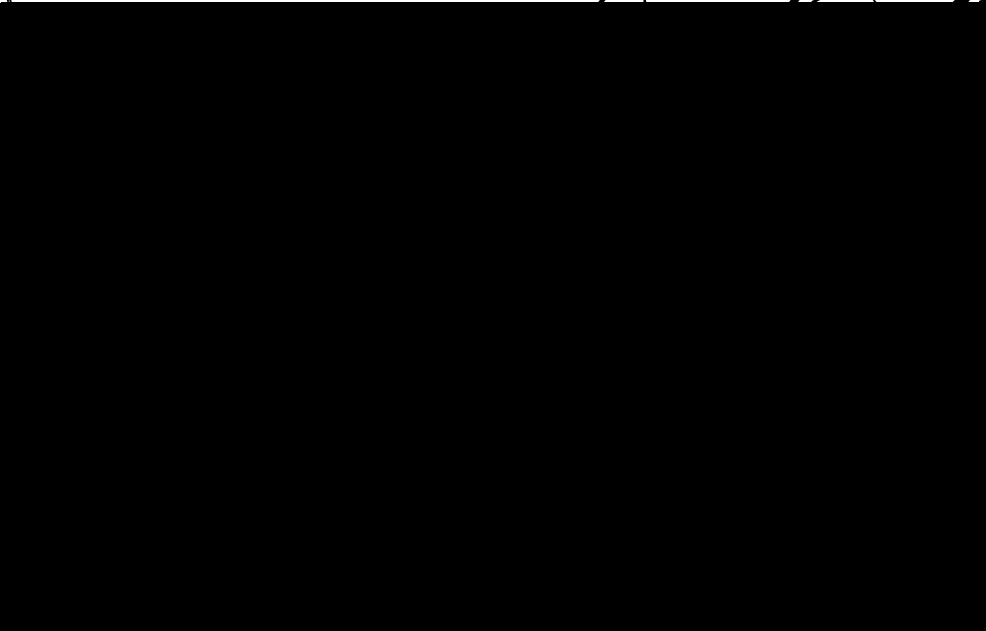
SURVEY PACKAGE TRACKING FORM

[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID. 2000-0002		Building • (707) 732 PIT EXTERIOR		Type 2	
Survey Area F		Survey Unit N/A		Area (m²) <15	
Survey Unit Description EXTERIOR/ROOF OF BUILDING 732 (732 PIT) THIS SURVEY AREA IS NOT RADIOLOGICALLY POSTED					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	0	0	1	0	30
Building		Type		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 2000-0002	Building: (707) 732 PIT EXTERIOR/ROOF
Survey Area: F	Survey Unit: N/A
Survey Unit Description: EXTERIOR/ROOF OF BUILDING 732 (732 PIT) THIS SURVEY AREA IS NOT RADIOLOGICALLY POSTED	
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input type="checkbox"/> Type 2 <input checked="" type="checkbox"/> Type 3 <input type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead, outdoor, or elevated areas may require additional controls or approvals from security. Assure that appropriate notifications have been made	
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Labeling Requirements: NONE	
Survey Package Implementation:	
	3/2/00 Date
	N/A Date
	3/2/00 Date
	5/15/00 Date
	N/A Date
	5/15/00 Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID 2000-0002		Building (707) 732 PIT EXTERIOR/ROOF
Survey Area F		Survey Unit N/A
Survey Unit Description EXTERIOR/ROOF OF BUILDING 732 (732 PIT) THIS SURVEY AREA IS NOT RADIOLOGICALLY POSTED		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	ROOF/EXTERIOR WALLS 30 uniformly distributed survey points distributed as follows - 8 on walls (walls < 2 meters) - 12 on roof of Building 732 NO <u>biased</u> survey points ** (**Due to extremely small survey area size, proposed locations for biased surveys will overlap with uniformly distributed survey locations)	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID 2000-0002		Building (707) 732 PIT EXTERIOR/ROOF
Survey Area: F		Survey Unit N/A
Survey Unit Description: EXTERIOR/ROOF OF BUILDING 732 (732 PIT) THIS SURVEY AREA IS NOT RADIOLOGICALLY POSTED		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 30 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	1 media sample from roof	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

1006

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

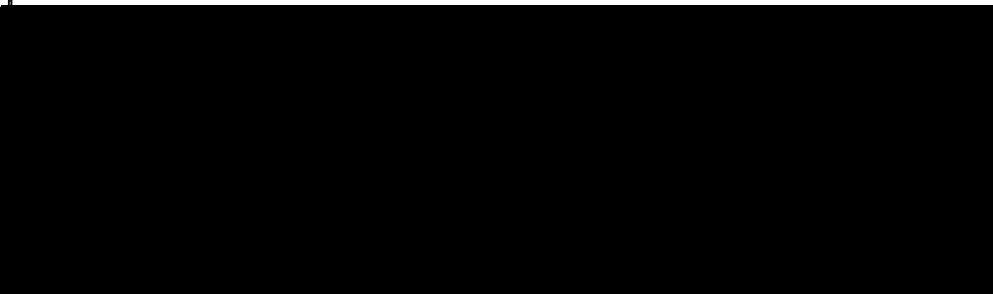
Package ID: 2000-0002	Building (707) 732 PIT EXTERIOR/ROOF
Survey Area: F	Survey Unit N/A
Survey Unit Description EXTERIOR/ROOF OF BUILDING 732 (732 PIT) THIS SURVEY AREA IS NOT RADIOLOGICALLY POSTED	
Survey/Sampling Instructions	
<p>NOTE 1. Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none"> - Direct alpha contamination - Removable alpha contamination - Removable beta contamination - 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3. Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys</p> <p>NOTE 4. Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p> <p>NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media "</p> <ul style="list-style-type: none"> • RCT - verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample • RCT - perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> <u>prior to media sampling</u> • Media Sampler – using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area • Media Sampler - Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection • Media Sampler – Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures • Media Sampler – media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 • <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, <i>Contamination Monitoring Requirements</i> 	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 2000-0002	Building (707) 732 PIT (EXTERIOR)
Survey Area F	Survey Unit N/A
Survey Unit Description: . EXTERIOR/ROOF OF BUILDING 732 (732 PIT) THIS SURVEY AREA IS NOT RADIOLOGICALLY POSTED	
Survey/Sampling Instructions	
<p>SUPPLEMENTAL INSTRUCTIONS.</p> <p>1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering</p> <p>2 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos</p> <p>3 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The highest "elevated reading" PAT measurement found in the 1m² scan area will be documented. Swipe measurements will be collected at the elevated reading location as well.</p> <p>4 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is not noted, fixed (PAT) measurements and swipes will be taken from the lower left hand corner of the 1m² scan area to maintain consistency in sample point locations.</p> <p>5 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02. Each recount shall be documented separately and the physical surface marked as specified in item 3 above.</p> <p>6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering. Survey forms shall be marked "N/A" where beta measurements are not collected.</p> <p>7 Where not already indicated assure that the following are written on the survey area diagram/photographic map/survey map</p> <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) <p>8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point</p> <p>(F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)</p>	

[illegible]

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 2000-0002	Building (707) 732 PIT EXTERIOR/ROOF	
Survey Area: F	Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>		
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	1	KDM
Total Activity Surveys	1	KDM
Exposure Rate Surveys	NA	NA
Removable Surveys	1	KDM
Media Samples	NA ^①	NA ^①
Volumetric Samples	NA	NA
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	1	KDM
Total Activity Surveys	1	KDM
Exposure Rate Surveys	NA	NA
Removable Surveys	1	KDM
Media Samples	NA ^①	NA ^①
Volumetric Samples	NA	NA
Comments ① no media samples taken, no paint at locations identified in survey package 		
		5-3 00
		Date
		5-15-00
		Date
		5/15/00
		Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____

Time _____

RCT _____

Print name _____

Signature _____

Emp # _____

RCT _____

Print name _____

Signature _____

Emp # _____

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____

RS Supervision _____

Print Name _____

Signature _____

Emp # _____

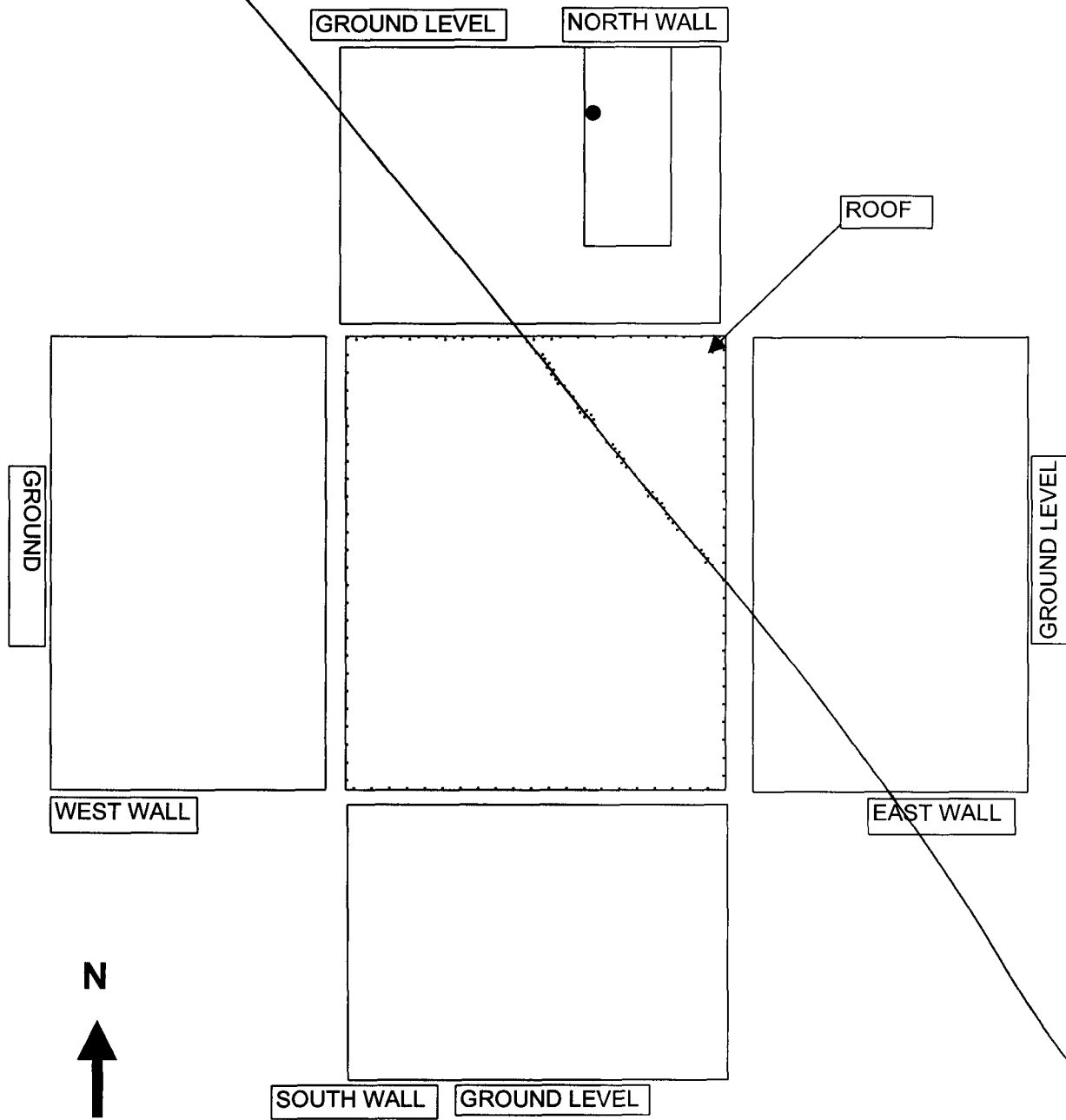
Page superseded
by 5/15/00 Change #1

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

**BUILDING 732 (732 "PIT")
EXTERIOR**



1012

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>3260</u>
Cal Due <u>8-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>7-17-00</u>
Bkg <u>0.2 cpm</u>	Bkg <u>0.3 cpm</u>	Bkg <u>1.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20</u>
MDA <u>12.9 dpm</u>	MDA <u>13.9 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u></u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u></u>
Serial # <u>959</u>	Serial # <u>833</u>	Serial # <u></u>
Cal Due <u>7-19-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u></u>
Bkg <u>40 cpm</u>	Bkg <u>43 cpm</u>	Bkg <u></u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u></u>
MDA <u>98.1 dpm</u>	MDA <u>101.3 dpm</u>	MDA <u></u>

Survey Type Contamination

Building 732
 Location 732 PIT Exterior/Roof Survey Area 1
 Purpose Reconnaissance Level Characterization

RWP # 00-707-1204Date 5-3-00 Time DAYS

RCT N/A
 Print name / Signature / Emp #

Comments Roof / Exterior Walls < 2 meters Unbiased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Roof / Exterior Walls < 2m	0	-8	42	16	Roof / Exterior Wall < 2m	0	-24	60
2		0	52	36	17		0	4	42
3		0	-24	72	18		0	0	18
4		6	-36	30	19		0	16	114
5		0	-8	54	20		0	16	156
6		3	12	54	21		0	-20	174
7		0	-12	78	22		0	-28	102
8		3	-28	102	23		0	-16	144
9		0	0	60	24		0	20	120
10		0	-8	96	25		0	-28	90
11		0	-20	84	26		0	4	108
12		3	0	84	27		0	8	84
13		0	24	90	28		0	8	156
14		0	0	54	29		0	8	150
15	see map	0	-16	72	30	see map	0	-40	132

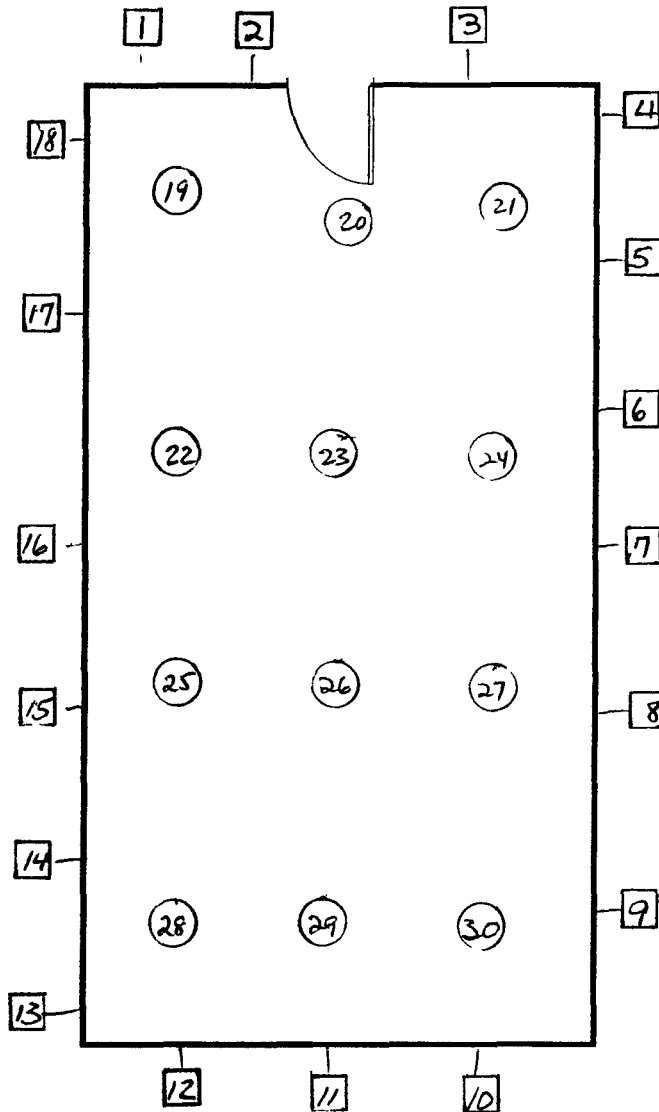
Date Reviewed: 5-3-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Bldg. 732




[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 2000-0002		Building (707) T707S (INTER)		Type 1	
Survey Area G		Survey Unit N/A		Area (m²) ~20	
Survey Unit Description INTERIOR OF T707S (STORAGE SHED) NOT RADIOLOGICALLY POSTED					
Survey Type RLC Survey <input checked="" type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	10	30	0	0	30
Building.		Type		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit.			Area (m²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description					
Survey Type RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 2000-0002	Building: (707) T707S (INTERIOR)		
Survey Area: G	Survey Unit: N/A		
Survey Unit Description: INTERIOR OF T707S (STORAGE SHED) NOT RADIOLOGICALLY POSTED			
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input checked="" type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/> _____			
Justification for Classification: N/A			
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads			
Special Safety Precautions: Access to roofs/structures may require additional safety measure, controls, and/or security requirements Make appropriate notifications prior to commencing surveys on roofs or similar structures Review RWP requirements and surveys prior to entry			
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>			
Labeling Requirements: NONE			
Survey Package Implementation:			
		3/8/00	
		Date	
		N/A	
		Date	
		3/8/00	
		Date	
		5/4/00	
		Date	
		N/A	
		Date	
6/4/00			
Date			
RESS Manager Printed Name	Employee #	RESS Manager Signature	Date

1077

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 2000-0002		Building (707) T707S (INTERIOR)
Survey Area: G		Survey Unit N/A
Survey Unit Description: INTERIOR OF T707S (STORAGE SHED) NOT RADIOLOGICALLY POSTED		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	<p>FLOORS/WALLS < 2 meters</p> <p>30** <u>uniformly distributed</u> survey points on the interior of T707S</p> <ul style="list-style-type: none"> - 5 survey points per wall - 10 survey points per floor <p>(**DUE TO SMALL SIZE OF THIS STRUCTURE, AND INACCESSIBILITY TO SURFACES DUE TO CONTENTS IT MAY NOT BE POSSIBLE TO OBTAIN PROCEDURALLY REQUIRED NUMBER OF SURVEY POINTS RCT SHALL OBTAIN AS MANY AS PRACTICABLE AND DOCUMENT)</p> <p>NO <u>biased</u> survey points will be required due to the small size of this structure and anticipated overlap with uniformly distributed points</p> <p>CEILINGS/WALLS > 2 meters</p> <p>10 <u>biased</u> surveys of ceiling and walls>2 meters (2 per wall, 2 on ceiling)</p>	<p>SEE NOTE 1</p> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p>

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 2000-0002		Building (707) T707S (INTERIOR)
Survey Area: G		Survey Unit N/A
Survey Unit Description: INTERIOR OF T707S (STORAGE SHED) NOT RADIOLOGICALLY POSTED		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements (continued)	EQUIPMENT 30** <u>biased</u> survey points on fixed equipment in this structure Equipment in this structure appears to be non-fixed equipment (**DUE TO SMALL SIZE OF THIS STRUCTURE AND POTENTIAL INACCESSIBILITY TO SURFACES DUE TO CONTENTS, IT MAY NOT BE POSSIBLE TO OBTAIN PROCEDURALLY REQUIRED NUMBER OF SURVEY POINTS RCT SHALL OBTAIN AS MANY AS PRACTICABLE AND DOCUMENT)	
Surface Scanning	FLOORS/WALLS < 2 meters 30 1 m ² surface scans shall be taken at each location identified for surface activity measurements Highest locations found above the DCGL shall be documented CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 2000-0002	Building (707) T707S (INTERIOR)
Survey Area. G	Survey Unit N/A
Survey Unit Description: INTERIOR OF T707S (STORAGE SHED) NOT RADIOLOGICALLY POSTED	
Survey/Sampling Instructions	
<p>NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none">- Direct alpha contamination- Removable alpha contamination- Removable beta contamination- 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3. Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID 2000-0002	Building (707) T707S INTERIOR
Survey Area G	Survey Unit N/A
Survey Unit Description : INTERIOR OF BUILDING T707S (FORMER OIL STORAGE SHED) NOT RADIOLOGICALLY POSTED	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<p>1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering</p> <p>2 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos</p> <p>3 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The highest "elevated reading" PAT measurement found in the 1m² scan area will be documented. Swipe measurements will be collected at the elevated reading location as well.</p> <p>4 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is not noted, fixed (PAT) measurements and swipes will be taken from the lower left hand corner of the 1m² scan area to maintain consistency in sample point locations.</p> <p>5 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02. Each recount shall be documented separately and the physical surface marked as specified in item 3 above.</p> <p>6 Due to potential impacts from beta-gamma emitters in some specified survey areas, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering. Survey forms shall be marked "N/A" where beta measurements are not collected.</p> <p>7 Where not already indicated, assure that the following are written on the survey area diagram/photographic map/survey map:</p> <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) <p>8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point:</p> <p>(F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)</p>	

[illegible]

Package ID: 2000-0002		Building (707) T707S (INTERIOR)	
Survey Area: G		Survey Unit: N/A	
Survey Type: Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/>			
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys		1	db
Total Activity Surveys		1	db
Exposure Rate Surveys		NA	NA
Removable Surveys		1	db
Media Samples		NA	NA
Volumetric Samples		NA	NA
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys		1	db
Total Activity Surveys		1	db
Exposure Rate Surveys		NA	NA
Removable Surveys		1	db
Media Samples		NA	NA
Volumetric Samples		NA	NA
Comments			
<div></div>			5200
		Date	
			5-4-00
		Date	
<div></div>			5/4/00
		Date	

Pgs 10-15 SUPERCEDED
5/2/00. (CHANGE 1)

(Survey Area Pkg Page 10 of 15)

RS FORMS 07 02-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg	Mfg	Mfg
Model	Model	Model
Serial#	Serial#	Serial#
Cal Due	Cal Due	Cal Due
Bkg	Bkg	Bkg
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA
Mfg	Mfg	Mfg
Model	Model	Model
Serial#	Serial#	Serial#
Cal Due	Cal Due	Cal Due
Bkg	Bkg	Bkg
Efficiency	Efficiency	Efficiency
MDA	MDA	MDA

Survey Type **CONTAMINATION**

Building

Location

Purpose **Reconnaissance Level Characterization**

RWP #

Date

Time

RCT

Print name

Signature

Emp #

RCT

Print name

Signature

Emp #

PRL #.

Comments

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed

RS Supervision

Print Name

Signature

Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

**BUILDING T707S (FORMER OIL
STORAGE SHED)**

NORTH WALL



WEST WALL

EAST WALL

FLOOR



SOUTH WALL

N

S

LINE
DENOTES APPROXIMATE 2
METER HEIGHT

CEILING

1025

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type CONTAMINATION

Building _____

Location _____

Purpose Reconnaissance Level Characterization

RWP # _____

Date _____ Time _____

 RCT _____ / _____
 Print name Signature Emp #

 RCT _____ / _____
 Print name Signature Emp #

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

 Date Reviewed _____ RS Supervision _____
 Print Name Signature Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

**BUILDING T707S (FORMER OIL
STORAGE SHED)**

NORTH WALL



WEST WALL

EAST WALL

FLOOR



SOUTH WALL

N

S

LINE
DENOTES APPROXIMATE 2
METER HEIGHT

CEILING

1027

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type CONTAMINATION

Building _____

Location _____

Purpose **Reconnaissance Level Characterization**

RWP # _____

Date _____ Time _____

RCT _____ / _____ / _____

Print name _____ Signature _____ Emp # _____

RCT _____ / _____ / _____

Print name _____ Signature _____ Emp # _____

PRL # _____

Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
13						33					
14						34					
15						35					
16						36					
17						37					
18						38					
19						39					
20						40					

Date Reviewed _____

RS Supervision _____

Print Name _____

Signature _____

Emp # _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

BUILDING T707S (FORMER OIL
STORAGE SHED)

NORTH WALL



WEST WALL

EAST WALL

FLOOR



SOUTH WALL

N

S

LINE
DENOTES APPROXIMATE 2
METER HEIGHT

CEILING

1029

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 846	Serial # 1054	Serial # 3265
Cal Due 8-15-00	Cal Due 8-23-00	Cal Due 7-3-00
Bkg 0.0	Bkg 0.4	Bkg 0.33 cpm
Efficiency 33%	Efficiency 33%	Efficiency 21.0%
MDA 20.4 dpm	MDA 20.4 dpm	MDA 94 dpm
8.2 dpm	14.8 dpm	
Mfg Eberline	Mfg Eberline	Mfg N/A
Model BC-4	Model BC-4	Model
Serial # BC 833	Serial # BC 959	Serial #
Cal Due 7-14-00	Cal Due 7-19-00	Cal Due
Bkg 46.0 cpm	Bkg 38.0 cpm	Bkg
Efficiency 25%	Efficiency 25%	Efficiency
MDA 1045 dpm	MDA 95.9 dpm	MDA N/A

Survey Type Contamination

Building T707-S
 Location Inside Survey Area G
 Purpose Reconnaissance Level Characterization

RWP # N/A

Date 1-20-00 Time 1430

RCT N/A N/A N/A
 Print name / Signature Emp #

Comments Floor / Walls < 2 meters Unbiased survey points
 1 m² scans, 1 minute pats and swipes See map for locations
 28-30 Unaccessible

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Floor	0	-36	0	16	Wall	3	-20	24
2	Floor	0	8	18	17	Wall	3	-12	0
3	Floor	0	32	0	18	Wall	0	-24	0
4	Floor	3	8	12	19	Wall	3	72	12
5	Floor	3	-24	18	20	Wall	0	4	0
6	Floor	3	-44	18	21	Wall	3	8	0
7	Floor	0	28	24	22	Wall	0	-12	42
8	Floor	0	0	18	23	Wall	0	-12	30
9	Floor	0	0	12	24	Wall	3	-12	30
10	Floor	0	-16	0	25	Wall	0	-36	0
11	Wall	0	-12	18	26	Wall	3	12	18
12	Wall	0	48	12	27	Wall	0	-12	6
13	Wall	0	4	24	28	see comment			
14	Wall	3	4	12	29	1			
15	Wall	0	28	0	30				

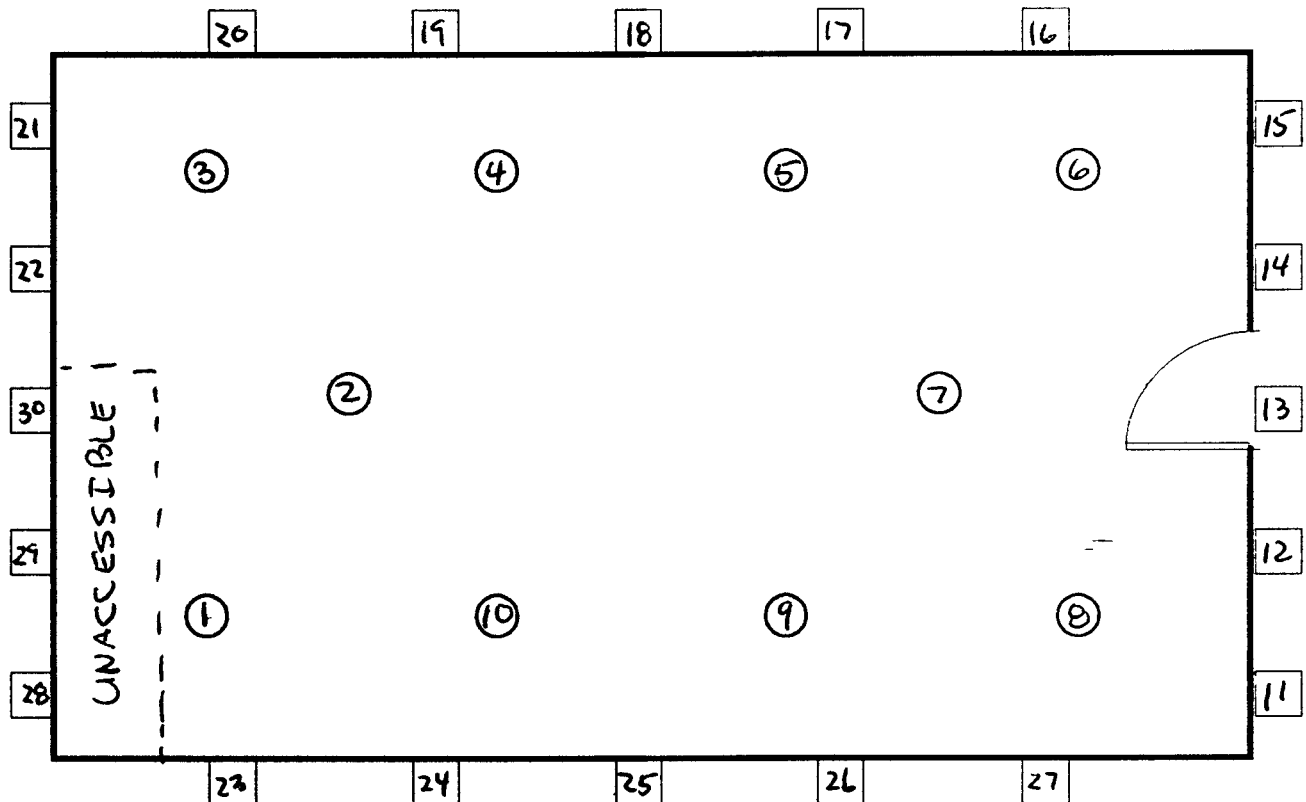
Date Reviewed: 5-2-00 RS Supervisor

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Bldg. T707-S



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA****Survey Type Contamination**

Building T707-S
 Location Inside Survey Area G
 Purpose Reconnaissance Level Characterization

RWP # NADate 4-27-00 Time 1400

RCT NA →
 Print name / Signature / Emp #

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>1233</u>
Cal Due <u>8-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.0 cpm</u>	Bkg <u>6.3 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.63%</u>
MDA <u>8.2 dpm</u>	MDA <u>13.9 dpm</u>	MDA <u>94 dpm</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NA</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>NA</u>
Serial # <u>959</u>	Serial # <u>833</u>	Serial # <u>NA</u>
Cal Due <u>7-19-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>NA</u>
Bkg <u>4.3 cpm</u>	Bkg <u>4.3 cpm</u>	Bkg <u>NA</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>NA</u>
MDA <u>101.3 dpm</u>	MDA <u>101.3 dpm</u>	MDA <u>NA</u>

Comments Equipment Biased survey points1 minute pats and swipes See map for locations20-30 not enough equipment to survey**SURVEY RESULTS**

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Elect Box	0	-16	0	16	window sil	0	4	-6
2	Elect Box	0	28	0	17	window sil	0	-24	0
3	conduit	0	-16	12	18	conduit	3	8	12
4	conduit J Box	0	-40	-6	19	conduit	3	4	-6
5	^{SPC 4-27-00} conduit bench	0	-20	24	20	END of SURVEY			NA
6	bench	0	0	-6	21				
7	conduit	0	-8	6	22				
8	cabinet	6	-12	12	23				
9	shelf	0	-16	-6	24				
10	shelf	0	8	12	25				
11	shelf	0	-68	6	26				
12	Heater	0	-8	12	27				
13	J-Box	3	-52	-6	28				
14	Light	3	-12	6	29				
15	Light	0	-24	0	30	NA			

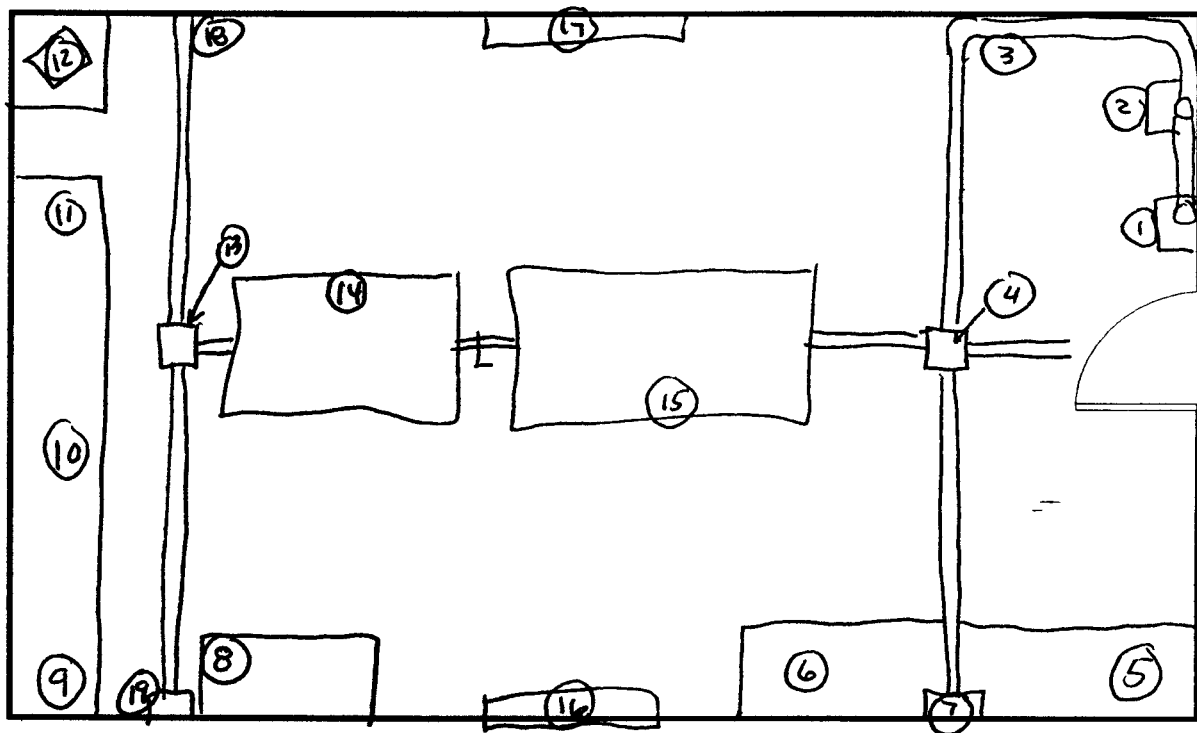
Date Reviewed. 5-2-00 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Bldg. T707-S



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA****Survey Type Contamination**

Building T707-S
 Location Inside Survey Area G
 Purpose Reconnaissance Level Characterization

RWP # NADate 4-27-00 Time 1500

RCT NA →
 Print name / Signature / Emp #

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1054</u>	Serial # <u>1233</u>
Cal Due <u>8-15-00</u>	Cal Due <u>8-23-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.0 cpm</u>	Bkg <u>0.3 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.63%</u>
MDA <u>8.2 DPM</u>	MDA <u>13.9 DPM</u>	MDA <u>94 DPM</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NA</u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u>NA</u>
Serial # <u>959</u>	Serial # <u>833</u>	Serial # <u>NA</u>
Cal Due <u>7-19-00</u>	Cal Due <u>7-14-06</u>	Cal Due <u>NA</u>
Bkg <u>43 cpm</u>	Bkg <u>43 cpm</u>	Bkg <u>NA</u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u>NA</u>
MDA <u>101.3 DPM</u>	MDA <u>101.3 DPM</u>	MDA <u>NA</u>

Comments Ceiling / Walls > 2 meters Biased survey points
1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Wall	3	-28	12	16	NA			
2		0	40	0	17				
3		0	-8	18	18				
4		0	8	18	19				
5		0	-20	6	20				
6		6	-28	0	21				
7		0	-32	12	22				
8	Wall	0	8	-6	23				
9	Ceiling	0	-28	24	24				
10	Ceiling	0	8	-12	25				
11	END OF SURVEY			NA	26				
12					27				
13					28				
14					29				
15	NA								

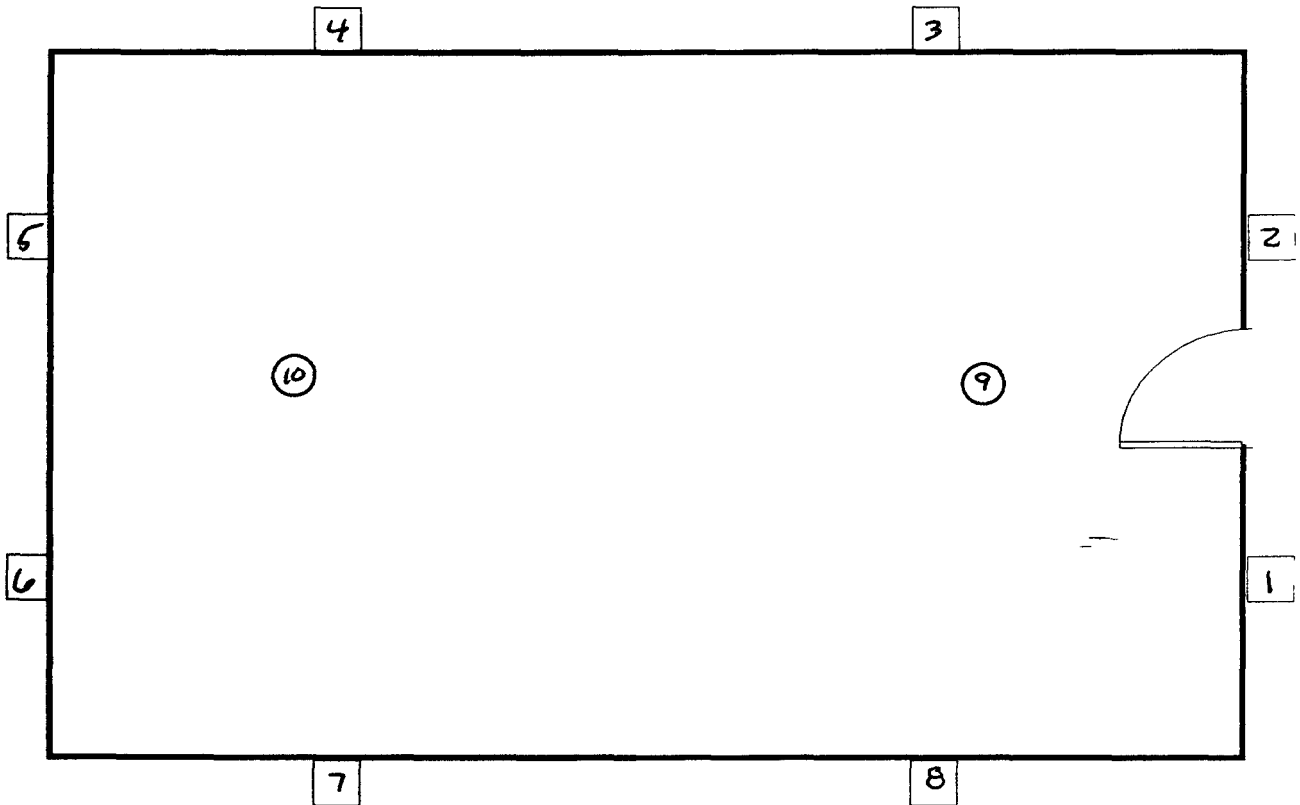
Date Reviewed 5-2-00 RS Supervision: [Redacted]

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Bldg.T707-S

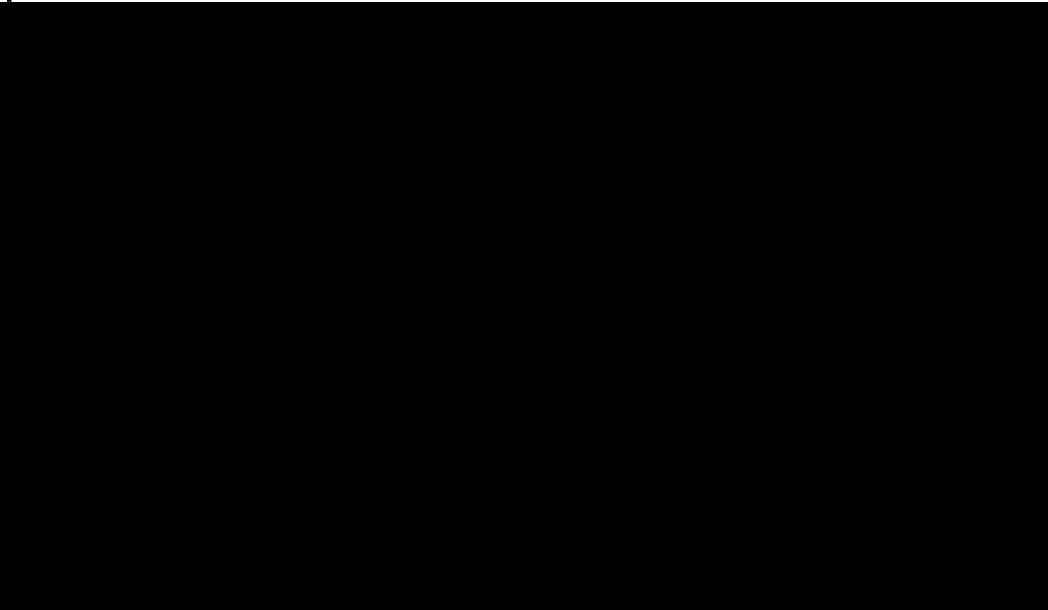


[illegible]

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 2000-0002		Building: (707) T707S (INTER)		Type 1	
Survey Area H		Survey Unit: N/A		Area (m ²) ~20	
Survey Unit Description EXTERIOR/ROOF OF T707S (STORAGE SHED) NOT RADIOLOGICALLY POSTED					
Survey Type			Classification		
RLC Survey X FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	0	0	0	0	30
Building.		Type.		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description:					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building.		Type		Survey Area	
Survey Unit:			Area (m ²)		
Survey Unit Description					
Survey Type.			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Type		Survey Area	
Survey Unit			Area (m ²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey <input type="checkbox"/> FSS <input type="checkbox"/>			Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input type="checkbox"/>		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 2000-0002	Building: (707) T707S (EXTERIOR/ROOF)	
Survey Area: H	Survey Unit: N/A	
Survey Unit Description: EXTERIOR/ROOF OF T707S (STORAGE SHED) NOT RADIOLOGICALLY POSTED		
Building Information: Survey Type Reconnaissance Level Characterization Survey <input checked="" type="checkbox"/> Final Status Survey <input type="checkbox"/> Building Type Type 1 <input checked="" type="checkbox"/> Type 2 <input type="checkbox"/> Type 3 <input type="checkbox"/> Classification Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Contaminants of Concern Plutonium <input checked="" type="checkbox"/> Uranium <input checked="" type="checkbox"/> Other <input type="checkbox"/>		
Justification for Classification: N/A		
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads		
Special Safety Precautions: Access to roofs/structures may require additional safety measure, controls, and/or security requirements Make appropriate notifications prior to commencing surveys on roofs or similar structures Review RWP requirements and surveys prior to entry		
Isolation Controls: Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> N/A <input checked="" type="checkbox"/>		
Labeling Requirements: NONE		
Survey Package Implementation:		
		
		3/8/00
		N/A
		3/8/00
		4-26-00
		4/26/00

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 2000-0002		Building (707) T707S (EXTERIOR/ROOF)
Survey Area: H		Survey Unit N/A
Survey Unit Description. EXTERIOR/ROOF OF T707S (STORAGE SHED) NOT RADIOLOGICALLY POSTED		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity Measurements	ROOF/EXTERIOR WALLS 30 <u>uniformly distributed</u> survey points on the EXTERIOR/ROOF of T707S - 5 survey points per wall - 10 survey points on roof NO <u>biased</u> survey points will be required due to the small size of this structure and anticipated overlap with uniformly distributed points	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID. 2000-0002		Building (707) T707S (EXTERIOR/ROOF)
Survey Area: H		Survey Unit N/A
Survey Unit Description EXTERIOR/ROOF OF T707S (STORAGE SHED) NOT RADIOLOGICALLY POSTED		
Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	ROOF/WALLS 30 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Highest locations found above the DCGL shall be documented.	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 2000-0002	Building (707) T707S (EXTERIOR/ROOF)
Survey Area: H	Survey Unit N/A
Survey Unit Description • EXTERIOR/ROOF OF T707S (STORAGE SHED) NOT RADIOLOGICALLY POSTED	
Survey/Sampling Instructions	
<p>NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following</p> <ul style="list-style-type: none">- Direct alpha contamination- Removable alpha contamination- Removable beta contamination- 1m² scan measurements for alpha contamination <p>(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)</p> <p>NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package</p> <p>NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped</p> <p>NOTE 4 Surveys in some areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received</p>	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID. 2000-0002	Building (707) T707S EXTERIOR
Survey Area: H	Survey Unit N/A
Survey Unit Description • EXTERIOR OF BUILDING T707S (FORMER OIL STORAGE SHED) NOT RADIOLOGICALLY POSTED	
Survey/Sampling Instructions	
SUPPLEMENTAL INSTRUCTIONS	
<p>1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering</p> <p>2 Survey results determined to be above the surface contamination criteria of DOE 5400.5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos</p> <p>3 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The highest "elevated reading" PAT measurement found in the 1m² scan area will be documented. Swipe measurements will be collected at the elevated reading location as well</p> <p>4 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is not noted, fixed (PAT) measurements and swipes will be taken from the lower left hand corner of the 1m² scan area to maintain consistency in sample point locations</p> <p>5 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07.02. Each recount shall be documented separately and the physical surface marked as specified in item 3 above</p> <p>6 Due to potential impacts from beta-gamma emitters in some specified survey areas, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering. Survey forms shall be marked "N/A" where beta measurements are not collected</p> <p>7 Where not already indicated assure that the following are written on the survey area diagram/photographic map/survey map</p> <ul style="list-style-type: none"> • Building number • Geographical direction (e.g., indicate which direction is North) • Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate) <p>8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point</p> <ul style="list-style-type: none"> (F) = floors (<2m) = walls less than 2 meters (>2m) = walls greater than 2 meters (C) = ceilings (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.) 	

[illegible]

Package ID 2000-0002	Building (707) T707S (EXTERIOR/ROOF)	
Survey Area: H	Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey <input type="checkbox"/>		
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	S	d-
Total Activity Surveys	S	d-
Exposure Rate Surveys	NA	NA
Removable Surveys	S	d-
Media Samples	NA	NA
Volumetric Samples	NA	NA
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	S	d-
Total Activity Surveys	S	d-
Exposure Rate Surveys	NA	NA
Removable Surveys	S	d-
Media Samples	NA	NA
Volumetric Samples	NA	NA
Comments 		
		4-17-00 Date
		4-26-00 Date
		4/26/00 Date

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE**INSTRUMENT DATA**

Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>NeTech</u>
Model <u>Sac-4</u>	Model <u>Sac-4</u>	Model <u>Electra</u>
Serial # <u>846</u>	Serial # <u>1270</u>	Serial # <u>1233</u>
Cal Due <u>8-15-00</u>	Cal Due <u>4-12-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.1 cpm</u>	Bkg <u>0.2 cpm</u>	Bkg <u>2.0 cpm</u>
Efficiency <u>33%</u>	Efficiency <u>33%</u>	Efficiency <u>20.63%</u>
MDA <u>115 DPM</u>	MDA <u>129 DPM</u>	MDA <u>94 DPM</u>
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u> </u>
Model <u>BC-4</u>	Model <u>BC-4</u>	Model <u> </u>
Serial # <u>872</u>	Serial # <u>833</u>	Serial # <u> </u>
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due <u>NA</u>
Bkg <u>40 cpm</u>	Bkg <u>41 cpm</u>	Bkg <u> </u>
Efficiency <u>25%</u>	Efficiency <u>25%</u>	Efficiency <u> </u>
MDA <u>981 DPM</u>	MDA <u>99.2 DPM</u>	MDA <u> </u>

Survey Type Contamination

Building T707-S
 Location Roof - Wall Survey Area H
 Purpose Reconnaissance Level Characterization

RWP # _____

Date 4-5-00 Time 1500

RCT _____

Print name / Signature / Emp #

Comments Roof / Exterior Walls ¹⁴⁻¹⁷⁻⁰⁰ 2 meters Unbiased survey points
1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha	Swipe #	Location/Description (Results in DPM/100cm ²)	Removable		Total Alpha
		Alpha	Beta				Alpha	Beta	
1	Wall	0	20	30	16	Wall	0	-12	0
2	Wall	0	-28	36	17	Wall	3	-8	12
3	Wall	0	12	18	18	Wall	3	-20	24
4	Wall	0	0	12	19	Wall	0	8	0
5	Wall	3	-24	24	20	Wall	3	-8	36
6	Wall	0	-24	0	21	Roof	0	8	30
7	Wall	0	28	12	22	Roof	0	4	60
8	Wall	0	-24	30	23	Roof	0	12	60
9	Wall	3	16	36	24	Roof	3	32	48
10	Wall	0	-8	30	25	Roof	0	-16	36
11	Wall	0	40	24	26	Roof	3	24	54
12	Wall	0	24	24	27	Roof	0	-4	6
13	Wall	0	-8	30	28	Roof	0	-8	12
14	Wall	15	-12	24	29	Roof	0	8	24
15	Wall	0	28	24	30	Roof	15	-4	78

Date Reviewed. 4-17-00 RS Supervisor

4-26-00

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA

Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____
Mfg _____	Mfg _____	Mfg _____
Model _____	Model _____	Model _____
Serial# _____	Serial# _____	Serial# _____
Cal Due _____	Cal Due _____	Cal Due _____
Bkg _____	Bkg _____	Bkg _____
Efficiency _____	Efficiency _____	Efficiency _____
MDA _____	MDA _____	MDA _____

Survey Type **CONTAMINATION**

Building _____
Location _____
Purpose Reconnaissance Level Characterization
RWP # _____
Date _____ Time _____
RCT _____ / _____ / _____
Print name _____ Signature _____ Emp # _____
RCT _____ / _____ / _____
Print name _____ Signature _____ Emp # _____

PRL #. _____
Comments _____

SURVEY RESULTS

Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct		Point #	Location/Description (Results in DPM/100CM ²)	Removable		Direct	
		Alpha	Beta	Alpha	Beta			Alpha	Beta	Alpha	Beta
1						21					
2						22					
3						23					
4						24					
5						25					
6						26					
7						27					
8						28					
9						29					
10						30					
11						31					
12						32					
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16						36					
17						37					
18						38					
19						39					
20						40					

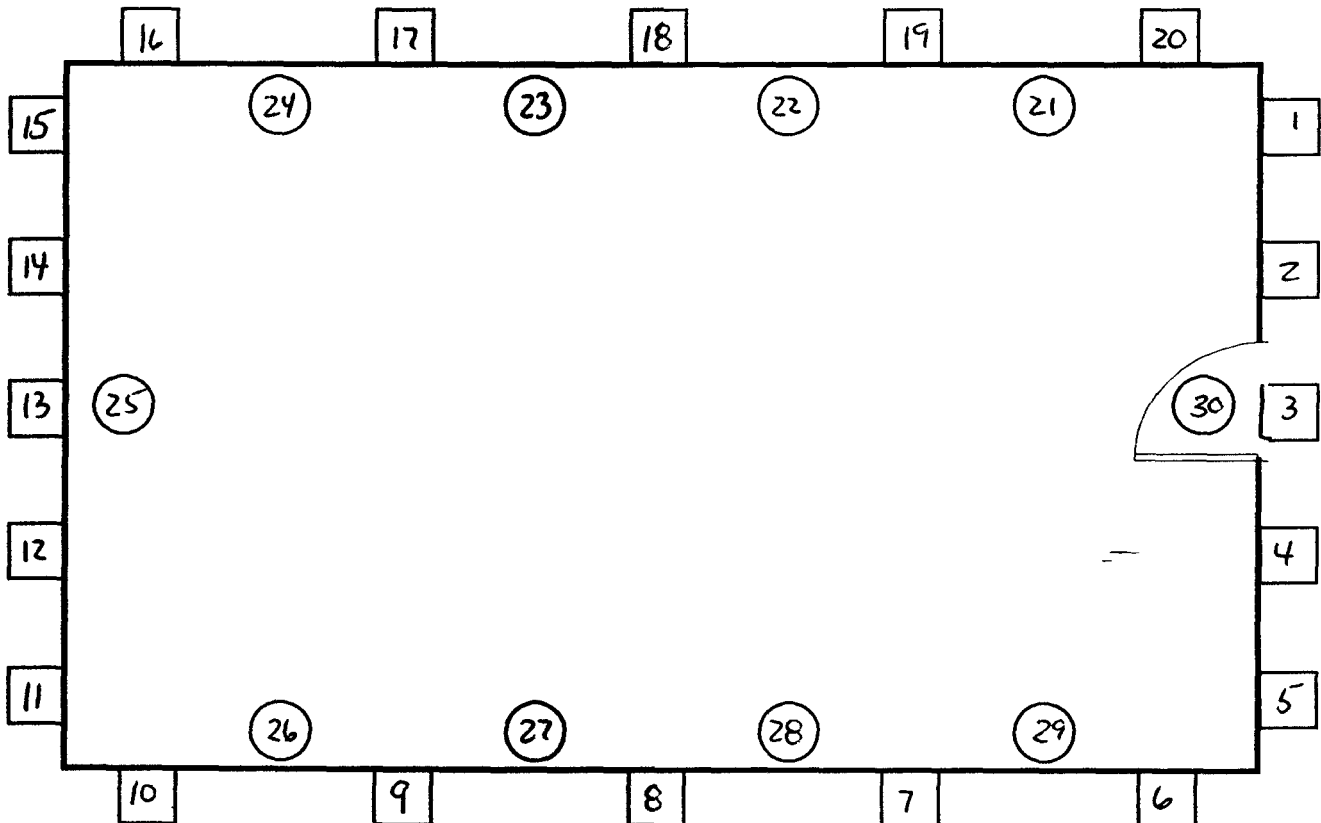
Date Reviewed _____ RS Supervision _____
Print Name _____ Signature _____ Emp # _____

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Bldg. T707-S



PAGE SUPERCEDED (CHG 2)

4-26-00

(Survey Area Pkg Page 11 of 11)

RS FORMS 07 02-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

DRAWING SHOWING SURVEY POINTS

**BUILDING T707S EXTERIOR
(FORMER OIL STORAGE SHED)**



NORTH WALL EXTERIOR

WEST WALL EXTERIOR

EAST WALL EXTERIOR

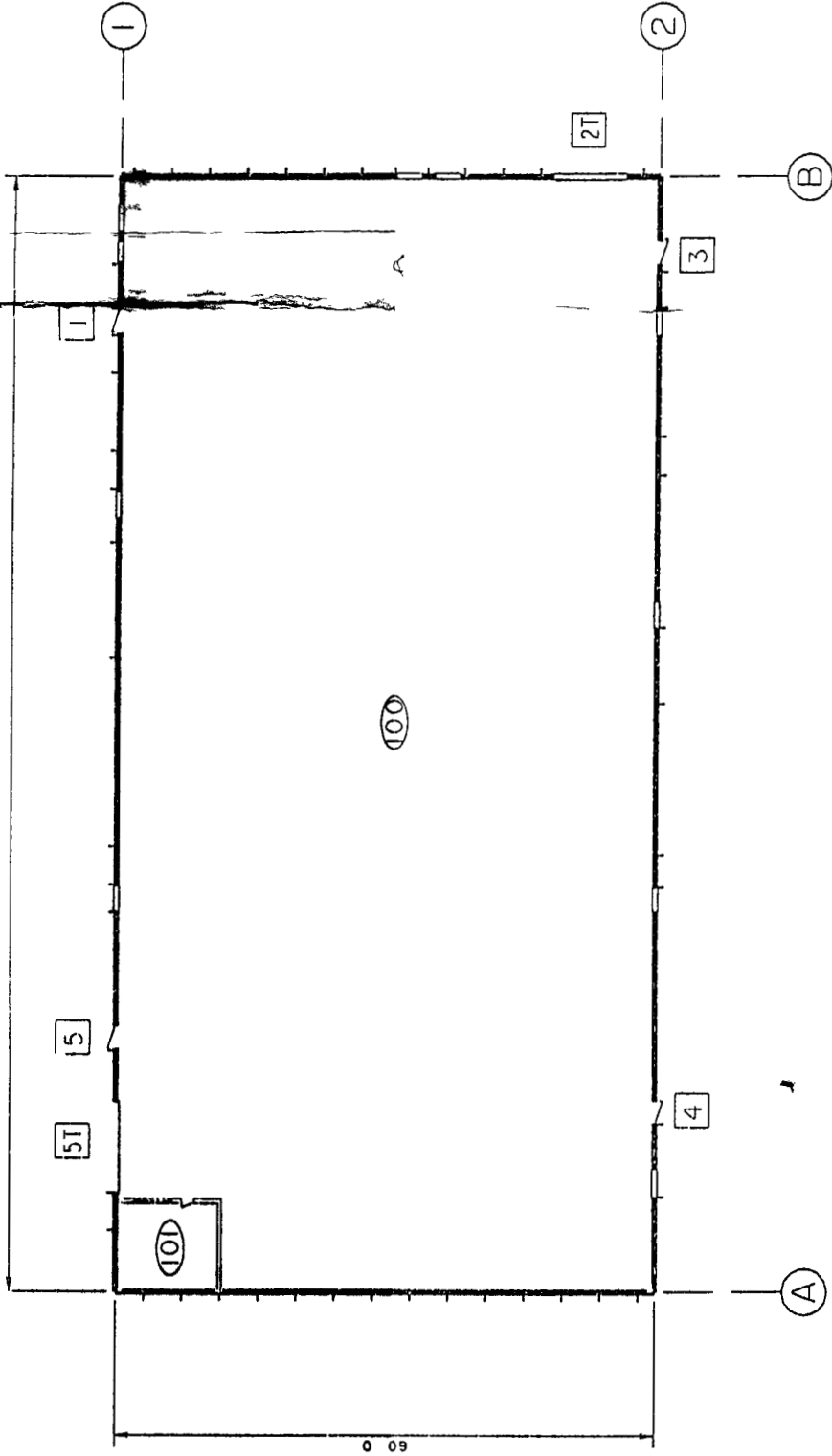
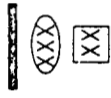
ROOF

SOUTH WALL EXTERIOR

1048 / 1048

○ = Survey Area AA

LEGEND



FLOOR PLAN

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VERIFY REVISION BEFORE USE

INFORMATION ONLY

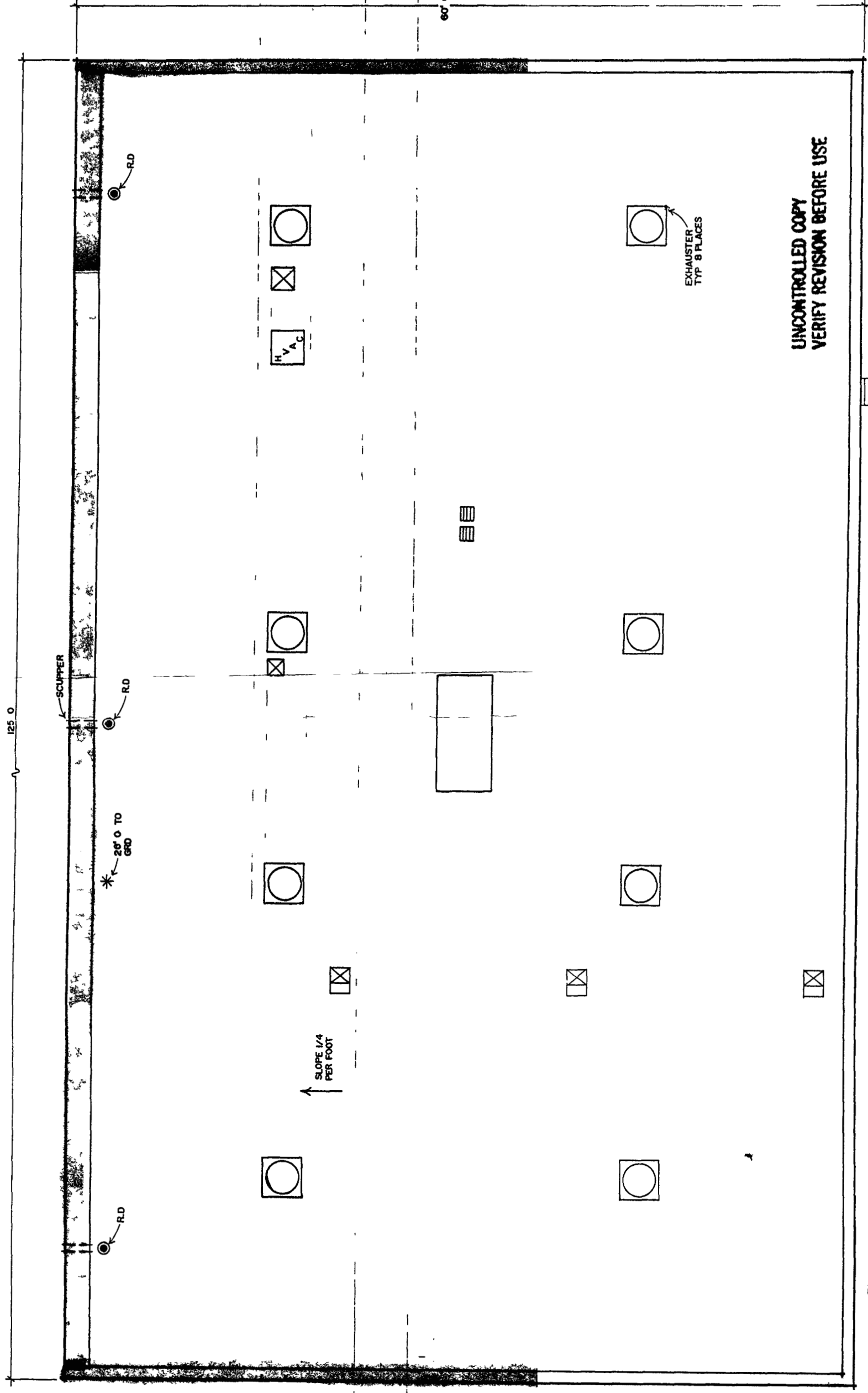
FOR REFERENCE ONLY

KEYWORDS		C REDRAWN		D ISSUED FOR FINAL		3/ 1/ 1 - B 10J 127		1004 9004 E	
2 PLAN		3		4		5		6	
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MASTER DRAWING

358/466

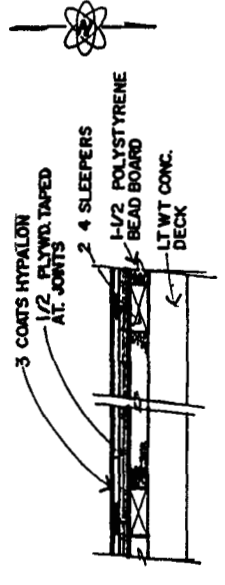
431



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VERIFY REVISION BEFORE USE

- LEGEND
- ROOF DRAIN
 - PITCH PAN
 - SKYLIGHT
 - A.C. UNITS
 - TURBINE VENT
 - SCUPPER
 - GOOSENECK
 - EXHAUSTER
 - HATCH
 - PARAPET
 - PLUMBING VENT
 - HEATER VENT
 - MOISTURE RELIEF
 - GAS/ELECTRIC LINE
 - FENCE
 - CAPPED OPENING

○ = SURVEY AREA BB



708 — COMPRESSOR BLDG

SCALE 1/4" = 1'-0"



MASTER DRAWING
MAINTAIN AS BUILT PER DES 8
FE GROUP RESPONSIBLE

ORIG NAL ISSUE	DESCRIPTION	DATE	BY	DATE	BY
DESIGNED	DATE	12/16/83	DA E	12/16/83	DA E
DRAWN	DATE				
CHECKED	DATE				
APPROVED	DATE				
NOTED	DATE				
SCALE	1/4" = 1'-0"				
SIZE	D 30708 2 M				
ISSUE	A				
OF					

BLDG 708
ROOF PLAN

R ky Flat Plant
901 N. OL RADO

U.S. DEPARTMENT OF ENERGY
ROCK PLANTS AREA OFFICE
GOLDEN, COLORADO

12/16/83

DA E

12/16/83

DA E

INFORMATION ONLY

306/866

632